BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC 20554

In the Matter of	)	
	)	
Business Data Services in an Internet Protocol Environment	)	WC Docket No. 16-143
	)	
	)	
Investigation of Certain Price Cap Local Exchange Carrier Business Data Services Tariff Pricing Plans	)	WC Docket No. 15-247
	)	
	)	
Special Access for Price Cap Local Exchange Carriers	)	WC Docket No. 05-25
	)	
	)	
AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services	)	RM-10593

COMMENTS

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EXECUTIVE SUMMARY

To date, the Federal Communications Commission's BDS (also known as special access) proceedings have focused on whether and how to regulate price cap incumbent local exchange carriers ("ILECs") because these carriers, who once held a government sanctioned monopoly, alone possessed market power in the provision of these services. As for non-incumbents, their rates have largely been unregulated. This dominant/non-dominant approach to regulation, which the Commission has pursued for almost four decades, is rooted in sound and compelling economics since it provides entrants with incentives to commit effort, initiative, and financial investment and avoids needlessly burdening them with regulation when the ultimate policy goal is its elimination. Further, this approach, whereby firms other than franchise-monopoly incumbents are not subject to price regulation, underlies U.S. antitrust policy, which has adhered to the bedrock principle that if a firm attains its presence in the market, even monopoly, through legitimate means (*e.g.* not a monopoly franchise right), it should not find its pricing restricted. Cable and other competitive providers' investments to provide BDS have and are being made without any government grant of a monopoly. Thus, any Commission action to regulate cable providers or other non-incumbents based on their attaining market power – let alone on a weaker criterion of their having a certain market share or "ubiquitous" network coverage – would be contrary to sound economics and antitrust policy.

The Commission also should not be concerned (except in rare instances where collusion can be demonstrated) that non-incumbents will offer BDS in non-competitive areas at rates, terms, and conditions that are not just and reasonable and are unjustly or unreasonably discriminatory. First, ILECs offer BDS ubiquitously. They are subject to dominant carrier regulation today where sufficient competition does not exist; should the Commission determine

it necessary in this proceeding, they would be subject to some form of rate regulation in non-competitive areas. Customers thus would have available BDS from these carriers at rates, terms, and conditions that are just and reasonable and not unjustly or unreasonably discriminatory. Second, non-incumbents need to offer better rates, terms, and conditions than ILECs to sign up commercial customers, who are generally sophisticated purchasers – and market evidence supports this conclusion. Third, imposition of traditional Title II rate regulation – or even the FNPRM's proposed *ex ante* rate regulation – would harm non-incumbents that have made investments based on the existence of "light touch" regulatory policy, which only imposes on them the general carrier obligations of Sections 201 and 202 of the Communications Act. Fourth, non-incumbents, particularly smaller providers, have not been subject to traditional rate regulation in their provision of BDS and would find it unreasonably costly to comply. This is especially true because regulation would need to be expansive and intrusive if it were to have a reasonable chance of being effective, which ACA contends it cannot be, at least because BDS services are offered with complex rates, terms, and conditions. For non-incumbents, these costs would be sufficiently material to deter investment in new facilities and services.

Not only does the Commission's longstanding "light touch" approach for non-incumbents have a sound economic basis, it has produced enormously beneficial results, particularly because of entry by cable providers. The FNPRM finds that the provision of BDS by cable providers is a great success story. It then chronicles how cable providers have and are investing in networking initiatives to expand and upgrade their provision of BDS. As a result, the FNPRM concludes that competition is present for the provision of higher performance BDS in many circumstances and is therefore reluctant to impose regulation for these services. The

FNPRM's findings and conclusion are buttressed by the attached report on "ACA Operator Member Activities in the Market for Business Data Services," which finds:

Smaller Competitive Providers Have Made and Are Making Substantial Investments in BDS Infrastructure – Smaller competitive providers have made and are making substantial and sustained investments in network expansion and upgrades, largely to deploy additional fiber, to support the provision of Ethernet BDS. ACA estimates that its members that are not incumbents where they provide BDS are making at least tens of millions and upwards of $300 million of investments annually to deploy facilities to support the provision of BDS. This compares favorably to investments by other, larger non-incumbents.

Smaller Competitive Providers Have Made and Are Making Sustained Expenditures to Support BDS Customers – Beyond capital investment, smaller competitive providers are investing time and resources to better serve customers. For instance, smaller providers are dedicating additional personnel to their BDS sales and customer support teams with the aim of initiating service more quickly and reducing churn.

Smaller Competitive Providers Have Decreased Their BDS Prices Substantially – Over the past five years, smaller competitive providers in all areas have decreased prices for their Ethernet services by approximately 50 percent on average across all geographic areas and all customer segments – with some members reporting that prices have decreased even more, by 70 percent. This is largely due to them reducing their margins to respond to increased competition and not because of any material reduction in the cost of deployment for fiber-based BDS. (To provide a point of reference, the FNPRM estimates that the price cap regulation would have resulted in a reduction in prices ("Price Cap Reset") of between 2.21 percent and

20.43 percent over a 10 year period. As another point of reference, the proposal of INCOMPAS and Verizon would going forward result in a 16 percent price reduction over the next five years.)

In sum, regulating non-incumbent providers of BDS would be contrary to longstanding Commission policy, sound economics, and antitrust policy. It also would run counter to the many benefits that non-incumbents have brought to the BDS market, including robust investment, increased network coverage, more innovative services, and lower prices. On the other side of the scale, the Commission offers no economic basis for regulation, no evidence that non-incumbents are harming consumers, and no evidence that subjecting non-incumbents to dominant carrier or other rate regulation in non-competitive areas would provide benefits. Accordingly, the Commission should not pursue any further its inquiry about whether to rate regulate non-incumbent providers of BDS.

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COMMENTS

The American Cable Association[1] ("ACA") hereby submits comments in response to the Further Notice of Proposed Rulemaking in the above-referenced dockets.[2] ACA's comments

[1] ACA represents approximately 750 smaller cable operators and other local providers of broadband Internet access, voice, and video programming services to residential and commercial customers. Many of these providers offer broadband data services ("BDS"), and most others are considering offering BDS. In these comments, we use the term "cable operator or provider," "competitive provider," or "non-incumbent local exchange carrier, carrier, or provider" to refer to providers competing with the incumbent local exchange carrier in their territory.

[2] *Business Data Services in an Internet Protocol Environment*, WC Docket No. 16-143, *Investigation of Certain Price Cap Local Exchange Carrier Business Data Services Tariff Pricing Plans*, WC Docket No. 15-247, *Special Access for Price Cap Local Exchange Carriers*, WC Docket No. 05-25, *AT&T Corporation Petition for Rulemaking to Reform Regulation of Incumbent Local Exchange Carrier Rates for Interstate Special Access Services*, RM-10593, Tariff Investigation Order and Further Notice of Proposed Rulemaking, FCC 16-54 (rel. May 2, 2016) ("FNPRM").

focus on one issue: the value of maintaining the longstanding policy of the Federal Communications Commission ("Commission") to apply a light regulatory touch to the provision of BDS (also known as special access) by non-incumbent local exchange carriers. As discussed herein, the so-called "dominant/non-dominant" paradigm has been an unqualified and tremendous success. Non-incumbent carriers, including cable operators and other competitive providers, have invested and are investing billions of dollars in new facilities to provide high-performance BDS at prices significantly below those of the incumbent local exchange carriers ("ILECs") and with innovative functionalities and assured reliability. Yet, in the face of this success and without any record supporting an inquiry, the FNPRM raises for the first time the question of whether to regulate non-incumbent providers in non-competitive markets, rather than continuing to focus solely on the proper regulatory framework for incumbent carriers in non-competitive markets. To support this unprecedented inquiry, the Commission misuses and misapplies economic analysis tools typical of traditional market power or antitrust inquiries, including by asking whether it should regulate a non-incumbent that has no franchise monopoly based on whether that provider has the "largest market share," a "certain threshold" market share, or a "near ubiquitous network."[3] In these comments, ACA demonstrates that each of these approaches has no (or an insufficient) economic basis, would run counter to the Commission's goal of developing facilities-based competition, would cause substantial harm to providers and consumers, and thus should be summarily rejected.

I. INTRODUCTION AND OVERVIEW OF COMMENTS: THE MISSING CASE FOR REGULATING THE PROVISION OF BDS BY CABLE PROVIDERS AND OTHER NON-INCUMBENT PROVIDERS

The Commission's BDS proceedings, which have been underway for decades, have focused on whether and how to regulate price cap ILECs because these carriers, who once held

[3] FNPRM, ¶¶ 308-309.

a government-sanctioned monopoly, alone possessed market power in the provision of these services. As for non-incumbents, their rates "have largely been unregulated beyond the just and reasonable requirements applicable to all carriers under sections 201 and 202 of the Act."[4] Shortly after passage of the 1996 Telecommunications Act, the Commission, acting consistent with the Act's framework to focus regulatory oversight only on incumbents, began to investigate whether entry by non-incumbents may diminish the market power of the incumbents in the provision of BDS services, which would then permit the Commission to lessen regulation of incumbents and move them close to the minimal regulation to which competitive providers were already (and remain) subject. In 1999, the Commission exercised its predictive judgment about the development of competition and adopted triggers by which incumbents could receive pricing flexibility for the provision of dedicated transport or channel termination circuits (TDM-based BDS) in or outside of a metropolitan statistical area.[5] Beginning in 2006, the incumbents largely succeeded in obtaining regulatory relief for enterprise broadband services (IP-based BDS) through the forbearance process.[6] In 2012, the Commission determined that the competitive triggers underlying its pricing flexibility rules were not working as predicted and suspended their application, thus freezing the regulatory status quo.[7]

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[4] *Id*., ¶ 16.

[5] *See Access Charge Reform*, CC Docket No. 96-262, *Price Cap Performance Review for Local Exchange Carriers, et al.*, CC Docket No. 94-1 et al., Fifth Report and Order and Further Notice of Proposed Rulemaking, 14 FCC Rcd 14221 (1999) ("Pricing Flexibility Order").

[6] *See, e.g.*, *Verizon Telephone Companies' Petition for Forbearance from Title II and Computer Inquiry Rules with Respect to their Broadband Services is Granted by Operation of Law*, WC Docket No. 04-440, FCC News Release (rel. Mar. 20, 2006).

[7] *Special Access for Price Cap Local Exchange Carriers et al.*, WC Docket No. 05-25, RM-10593, Report and Order and Further Notice of Proposed Rulemaking, 27 FCC Rcd 16318 (2012) ("Data Collection FNPRM").

As part of its 2012 decision, the Commission initiated its BDS data collection with the aim of replacing the flawed competitive triggers which determine where incumbents would receive regulatory relief.[8] The Commission also sought comment on how to analyze the market for BDS and amend its pricing flexibility rules for incumbents. It further inquired whether the terms and conditions for ILEC BDS were just and reasonable and not unreasonably discriminatory. It did not solicit comment on any questions related to imposing new BDS-related regulation on non-incumbent providers. All comments received in that proceeding focused on regulation of incumbents; not one commenter suggested non-incumbent providers be subject to dominant carrier regulation.[9]

In sum, today, the Commission's dominant carrier regulations apply solely to price cap ILECs and principally to their offering of TDM BDS circuits to the extent they have not been granted pricing flexibility. The Commission heretofore has not questioned the light touch

[8] *Special Access for Price Cap Local Exchange Carriers et al.*, WC Docket No. 05-25, RM-10593, Report and Order, 28 FCC Rcd 13189 (WCB 2013) ("Data Collection Implementation Order").

[9] ILECs focused their comments only on getting relief for themselves. *See, e.g.*, Comments of AT&T, Inc., WC Docket No. 05-25 and RM-10593, at 2 (Jan. 27, 2016) ("the only controversy in this proceeding is not *whether* the Commission should eliminate price cap regulation where competitors have deployed such facilities, but rather what is the best way to determine where such sunk competitive facilities exist."); Comments of CenturyLink, WC Docket No. 05-25 and RM-10593, at 4 (Jan. 27, 2016) ("CenturyLink Comments") (The Commission "should refuse to re-regulate the highly competitive and dynamic marketplace at issue here; eliminate price cap regulation where on or more competitors provide (or could economically provide) service comparable to the ILECs; and set in place the means to promote even more innovation and infrastructure deployment going forward"); and, Comments of Verizon, WC Docket No. 05-25 and RM-10593, at 68 (Jan. 27, 2016) ("[T]he Commission should not increase the regulation of ILEC special access services…Unnecessary and uneven regulation not targeted at true market failure deters competition and constrains incentives to invest in facilities"). *See also* CenturyLink Comments at 33-35 and 38, where CenturyLink requests that the Commission achieve the goals of regulatory and competitive neutrality by eliminating "price cap regulation where a competitor is providing the same service as the ILEC." As for the comments of non-incumbents, they focused solely on regulating ILECs. *See e.g*. Comments of Windstream Services LLC, WC Docket No. 05-25 and RM-10593, at 4 (Jan. 27, 2016) ("The Commission, at a minimum, needs to take immediate action to stop ILECs from using their control over network bottleneck facilities to choke off competition in the IP era.").

regulatory status of non-incumbent providers, which has applied throughout the foregoing periods discussed and continues to apply.

The Commission's dominant/non-dominant approach to regulation, whereby firms other than franchise-monopoly incumbents are not subject to price regulation, is rooted in sound economics, one that underlies U.S. antitrust law and practice. As Drs. Schwartz and Mini explain in the White Paper attached to these comments, the economic logic for this approach is compelling since "it provides entrants with incentives to commit effort, initiative, and financial investment; and it avoids needlessly burdening entrants with regulation when the ultimate policy goal is its elimination."[10] Further, they note that "[t]he central goal of providing incentives to invest and innovate underlies the longstanding approach of U.S. antitrust."[11] In essence, a bedrock principle of antitrust law and policy is that a firm that attains its presence in the market, even monopoly, through legitimate means (*e.g.* not a monopoly franchise right) should not find its pricing restricted. Cable and other non-incumbent providers' investments to provide BDS have and are being made without any government grant of a monopoly. In fact, as the Commission explains, cable providers have entered despite facing significant barriers to entry "even within their incumbent franchise areas."[12] Thus, any Commission action to subject cable providers or other non-incumbents to regulation based on their attaining market power – let

[10] *See* "Economic Basis for Not Regulating Competitive Providers of Business Data Services," Dr. Marius Schwartz and Dr. Federico Mini, at 6 (June 24, 2016), attached as Appendix A ("Economists' White Paper").

[11] *Id*.

[12] FNPRM, ¶ 231

alone on a weaker criterion of their having a certain market share or "ubiquitous" network coverage[13] – would be contrary to sound economics and antitrust policy.[14]

Further, the Commission should not be concerned that non-incumbents will offer BDS in non-competitive areas at rates, terms, and conditions that are not just and reasonable and are unjustly or unreasonably discriminatory.[15] First, ILECs offer BDS ubiquitously. They are subject to dominant carrier regulation today where sufficient competition does not exist; should the Commission determine it necessary in this proceeding, they would be subject to some form of rate regulation in non-competitive areas. Customers thus could obtain incumbent-provided BDS that are just and reasonable and not unjustly or unreasonably discriminatory. Second, non-incumbents need to offer better rates, terms, and conditions than ILECs to sign up commercial customers, who are generally sophisticated purchasers – and market evidence supports this conclusion.[16] Third, imposition of traditional Title II rate regulation – or even the FNPRM's proposed *ex ante* rate regulation – would harm non-incumbents that have made investments based on the existence of "light touch" regulatory policy, which only imposes on them the general carrier obligations of Sections 201 and 202 of the Communications Act.[17] Fourth, non-incumbents, particularly smaller providers, have not been subject to traditional rate regulation in their provision of BDS and would find it unreasonably costly to comply. This is especially true, based on the hypothetical case where rate regulation would be required to correct a market

[13] *Id.*, ¶¶ 308-309, n. 723.

[14] It would be improper to characterize a market with an ILEC and a cable operator as a duopoly that would raise competitive concern. As explained above, cable entry was *de novo* and not pursuant to a grant of a monopoly. Second, there is no evidence in the record of collusive activity.

[15] 47 U.S.C. §§ 201(b), 202(a). The only exception would be in those instances where the Commission has evidence of collusive conduct.

[16] If non-incumbents offering BDS engage in practices or charge rates that are unjust or unreasonable or unjustly or unreasonably discriminatory, any customer or other concerned parties will be able, as they are today, to bring a Section 208 complaint against the carrier.

[17] Competitive providers also have not had notice from the Commission of any change in that policy.

failure, because regulation would need to be expansive and intrusive if it were to have any chance of being effective, which ACA contends it cannot be, because BDS services are offered with complex rates, terms, and conditions. For non-incumbent providers, these costs would be sufficiently material to deter investment in new facilities and services.

Not only does the Commission's longstanding "light touch" regulatory approach for non-incumbent providers have a sound economic basis, it has produced enormously beneficial results, particularly because of entry by cable providers. The Commission itself notes in the FNPRM, "[t]he great entry success story has been that of cable."[18] Cable providers are investing and undertaking new networking initiatives to overcome entry barriers and expand their provision of BDS.[19] As a result, the Commission finds, based on the data and its analysis, "that competition is present in BDS above 50 Mbps in many circumstances."[20] This conclusion is buttressed by the attached report on "ACA Operator Member Activities in the Market for Business Data Services,"[21] which chronicles the substantial and sustained investment in and provision of BDS by smaller competitive providers and the benefits, including lower prices, these non-incumbents have brought to commercial customers. Among the findings in the *ACA BDS Report* are:

Smaller Competitive Providers Have Made and Are Making Substantial Investments in BDS Infrastructure – Smaller competitive providers have made and are making substantial and sustained investments in network expansion and upgrades, largely

[18] FNPRM, ¶ 236.

[19] *Id*., ¶ 232.

[20] *Id*., ¶ 271.

[21] "ACA Operator Member Activities in the Market for Business Data Services," (June 2016) ("ACA BDS Report") attached as Appendix B.

additional fiber deployment, to support the provision of Ethernet BDS.[22] For instance, some smaller providers with already sizeable BDS revenue bases are making annual investments of approximately two times annual BDS revenue. ACA estimates that its members that are not incumbents where they provide BDS are making at least tens of millions and upwards of $300 million of investments annually to deploy facilities to support the provision of BDS. This compares favorably to investments by other, larger non-incumbents.

Smaller Competitive Providers Have Made and Are Making Sustained Expenditures to Support BDS Customers – Beyond capital investment, smaller competitive providers are investing time and resources to better serve customers. For instance, smaller providers are dedicating additional personnel to their BDS sales and customer support teams with the aim of initiating service more quickly and reducing churn.

Smaller Competitive Providers Have Reduced Their BDS Prices Substantially – Smaller competitive providers need to price below ILECs to sign up customers. Over the past five years, based on discussions with ACA members, smaller providers in all areas have decreased prices for their Ethernet services by approximately 50 percent on average across all geographic areas and for all customer segments – with some members reporting that prices have decreased even more, by 70 percent. This is largely due to them reducing their margins to respond to increased competition and not because of any material reduction in the cost of deployment of fiber-based BDS. (To provide a point of reference, the FNPRM estimates that

[22] As discussed further in the comments, ACA members rarely use their hybrid fiber-coaxial ("HFC") plant to provide BDS because of network limitations. In addition, they rarely provide TDM-based BDS.

the price cap regulation would have resulted in a reduction in prices ("Price Cap Reset") of between 2.21 percent and 20.43 percent over a 10 year period (2005-2013).)[23]

In sum, regulating non-incumbent providers of BDS would be contrary to longstanding Commission policy, sound economics, and antitrust policy. It also would run counter to the many benefits that non-incumbents have brought to the BDS market, including robust investment, increased network coverage, more innovative services, and lower prices. On the other side of the scale, the Commission offers no economic basis for regulation, no evidence that non-incumbents are harming consumers, and no evidence that subjecting non-incumbents to dominant carrier or other rate regulation in non-competitive areas would provide benefits. Accordingly, the Commission should not pursue any further its inquiry about whether to rate regulate non-incumbent providers of BDS.[24]

II. THE COMMISSION HAS APPLIED A DOMINANT CARRIER REGULATORY PARADIGM CONSISTENTLY FOR ALMOST FOUR DECADES, AND THIS APPROACH HAS PRODUCED SUBSTANTIAL BENEFITS

For decades, the Commission has consistently adopted regulatory frameworks in non-competitive markets that target the dominant provider for oversight while leaving the new

[23] FNPRM, Appendix C, Table 6 at 248. *See also* Letter from Chip Pickering, INCOMPAS, and Kathleen Grillo, Verizon, to Marlene H. Dortch, FCC, WC Docket Nos. 16-143 and No. 05-25 (June 27, 2016) ("INCOMPAS/Verizon proposal"). The INCOMPAS/Verizon proposal on rate regulation of BDS provides another point of reference. It would going forward result in a 16 percent price reduction over the next five years.

[24] ACA opposes the Commission's proposal to restrict all BDS providers from using non-disclosure agreements to limit the Commission's access to information about BDS terms. *See* FNPRM, ¶¶ 313-320. The Commission is proposing this rule because of limitations placed on competitive LECs apparently by ILECs. Because the Commission has not expressed concern about actions of competitive LECs and any rule, if adopted, will place compliance burdens on them, the rule should not apply to competitive providers. ACA also opposes limitations on the use of "All-or-Nothing Provisions," Shortfall Penalties, and Early Termination Fees by competitive providers. *See id.*, ¶¶ 321-343. Again, any concerns about these provisions are based on their use by ILECs and any potential abuse of market power. The Commission has no evidence that BDS customers of competitive providers find the use of these provisions, to the extent they are used by competitive providers, an issue. Further, the use of these provisions may prove beneficial to both competitive providers that use them and their customers in the provision of BDS.

entrants free from regulation or, at most, subject to a much lighter regulatory burden where any possibility of rate regulation would only occur via a complaint with evidence demonstrating a violation of Sections 201 or 202. In contrast, should non-dominant carriers be subject to rate regulation in non-competitive areas – an inquiry raised in the FNPRM – and should the Commission adopt its proposed *ex ante* rate requirements, *e.g.* price benchmarks, these carriers would be subject to more intrusive and onerous rate regulation. The Commission has recognized that such frameworks represent the best policy choice to create the most promising environment for a competitive market to emerge. The goal of these regulatory frameworks is the eventual elimination of the need for regulation of the dominant carrier once vibrant competition emerges and the dominant player's power is eroded. In contrast, imposing regulation on new entrants, when only the incumbent exercises meaningful market power derived from a monopoly grant, frustrates investment and innovation by the entrants, delaying the development of competition. The Commission's focused approach has proven a remarkable success as the communications marketplace today is largely and increasingly characterized by a wide variety of competing providers. Moreover, by applying the dominant provider approach consistently, the Commission has created potent incentives for future investment as providers have come to rely on a business environment where their investments will not be undermined by dramatic shifts in regulation.

The 1980 *Competitive Carrier Order* archetypally illustrates the Commission's embracing of a regulatory framework where incumbent providers continued to be subject to strict regulatory oversight while new entrants were subject to minimal regulatory burdens.[25] Prior to this order, a single set of rules, designed to curb monopoly power of the incumbent

[25] *Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefor*, CC Docket No. 79-252, First Report and Order, 85 FCC 2d 1 (FCC 1980) ("Competitive Carrier First Report and Order").

provider, applied to all participants in the interstate telecommunications market. The Commission, however, found these rules inapt for new entrants and modified its regulatory paradigm to "allow these new [entrant] companies and the overall telecommunications industry to satisfy consumer demands more effectively than the undifferentiated set of rules theretofore applied."[26] Those carriers classified as dominant, *i.e.*, incumbents with market power enabling them to control prices, continued to be subject to traditional federal regulatory requirements while non-dominant carriers were subject to a streamlined regulatory regime to allow them the ability to better respond to competitive pressures.[27]

More specifically, the Commission implemented dominant and non-dominant carrier classifications in the domestic interstate and international voice and data product markets, reflecting the fact that only incumbents had the ability to unjustly and unreasonably control prices. The Commission imposed different regulatory requirements for each classification:

> [W]e have decided (a) to adopt and make final our proposal to classify carriers either as dominant or non-dominant depending upon their power to control prices; and (b) to employ regulatory regimes more precisely designed to account for the attributes of firms in each denomination as proper and warranted by the public interest.[28]

In particular, the streamlined regulatory regime applicable to non-dominant carriers was designed to be flexible and promote competitive entry:

> The streamlined procedures we now adopt for non-dominant carriers are intended to enable them to respond to the demands of the competitive marketplace with a minimum of regulatory interference. These carriers will be afforded the flexibility to experiment with price/service offerings without the burden and delay of attempting to compile and produce substantial economic supporting data well in advance of when they will be permitted to

[26] *Id.*, ¶ 9.

[27] *Id.*, ¶¶ 27, 56.

[28] *Id.*, ¶ 25.

> market the service. They will now also be authorized to enter new markets quickly where they perceive competitive opportunities exist, or leave others on relatively short notice if their projections are not realized.[29]

Accordingly, those carriers classified as dominant were subjected to traditional regulatory requirements such as grant of Section 214 authority only to specifically requested points, prior approval for facilities expansion, submission of cost support data to establish the lawfulness of tariff filings under Sections 201(b) and 202(a), and a 70-90 day advance notice tariff filing requirement.[30] In contrast, non-dominant carriers were brought within a more liberal and streamlined regulatory regime, which included grant of Section 214 authorization with default continental United States coverage and elimination of approval for circuit additions, semiannual circuit addition reporting requirements, presumed lawful tariffs thereby eliminating the need for cost support data, and a reduced 14-day advance notice tariff filing timeframe.[31]

This differentiated dominant/non-dominant regulatory regime was perceived by the Commission as a logical means to foster the emergence of competition in a noncompetitive telecommunications market:

> The new regulatory scheme adopted today will enhance competition by reducing the degree of unnecessary regulation imposed upon non-dominant carriers. . . . By maintaining our regulatory oversight of dominant carriers, we do not intend to hinder their accomplishment of these same goals, but only insure that they do not exploit their market power unlawfully. . . . Not only is our action permissible, but we believe that it would defy logic and contradict the evidence available to regulate in an identical manner carriers who differ greatly in terms of their economic resources and market strength.[32]

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[29] *Id.*, ¶ 85.

[30] *Policy and Rules Concerning Rates for Competitive Common Carrier Services and Facilities Authorizations Therefor*, CC Docket No. 79-252, Notice of Inquiry and Proposed Rulemaking, 77 FCC 2d 308, ¶¶ 55-56, 65 (1979).

[31] *Competitive Carrier First Report and Order*, ¶¶ 96, 102, 133, 141.

[32] *Id.*, ¶¶ 33-34.

Since the original *Competitive Carrier* orders, the Commission has proceeded to reduce many of the dominant carrier regulations, as well as further eliminate or streamline the regulations of non-dominant carriers (*e.g.*, by eliminating tariff requirements of interexchange carriers altogether and making tariffs permissive but not mandatory for competitive local exchange carriers).[33] The net effect of this overall reduction in regulatory obligations is to leave only the most basic requirements on competitive carriers – e.g., adherence by means of complaint enforcement of the Section 201 and 202 just, reasonable, and not unjustly or unreasonably discriminatory obligations. Germane to the current proceeding, during the past three decades plus, the Commission has not seen fit to increase the regulatory burdens of non-dominant carriers but instead has radically reduced them.

Contemporarily with the *Competitive Carriers First Report and Order*, in its 1980 *Computer II Order*, the Commission pursued a similar approach in the markets for enhanced services and customer premises equipment ("CPE"). The Commission again applied differentiated regulatory obligations to carriers depending on their market power, or lack thereof,

[33] *See, e.g.*, *Policy and Rules Concerning the Interstate, Interexchange Marketplace, Implementation of Section 245(g) of the Communications Act of 1934*, CC Docket No. 96-61, Order on Reconsideration, 12 FCC Rcd 15014 (1997); *Policy and Rules Concerning the Interstate, Interexchange Marketplace, Implementation of Section 254(g) of the Communications Act of 1934*, CC Docket No. 96-61, Second Order on Reconsideration and Erratum, 14 FCC Rcd 6004 (1999); *Domestic, Interexchange Carrier Detariffing Order Takes Effect*, Public Notice, DA 00-1028 (Com.Car.Bur. May 9, 2000); *MCI WorldCom, Inc. v. FCC*, 209 F.3d 760 (D.C.Cir. 2000); *Policy and Rules Concerning the Interstate, Interexchange Marketplace Implementation of Section 254(g) of the Communications Act of 1934, as amended*, CC Docket No. 96-61, Order, 15 FCC Rcd 22321 (2000) (requiring detariffing of interstate, domestic, interexchange service of non-dominant interexchange carriers); *Hyperion Telecommunications, Inc. Petition for Forbearance et al.*, CCB/CPD 96-3 et al., Memorandum Opinion and Order and Notice of Proposed Rulemaking, 12 FCC Rcd 8596 (1997) (granting permissive detariffing for CLECs for the provision of interstate exchange access services); *Reporting Requirements for U.S. Providers of International Telecommunications Services*, IB Docket No. 04-112, First Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 7274 (2011) (eliminating international circuit addition reports); *Section 272(f)(1) Sunset of the BOC Separate Affiliate and Related Requirements;* WC Docket No. 02-112, *2000 Biennial Regulatory Review Separate Affiliate Requirements of Section 64.1903 of the Commission's Rules et al.*, CC Docket No. 00-175 et al., Report and Order and Memorandum Opinion and Order 22 FCC Rcd 16440 (2007) (eliminating dominant carrier regulation for AT&T, Qwest, and Verizon provision of in-region, interstate, long distance service).

in an effort to promote competition.[34] In response to concerns that "monopoly telephone companies" could leverage their control over basic services to the detriment of other providers' competitive service offerings, the Commission adopted rules requiring these carriers to provide enhanced services and CPE through separate corporate affiliates which were not permitted to own or operate transmission facilities.[35] The Commission explained that its "regulatory concerns which give rise to the need for structural separation should be directed at monopoly telephone companies exercising significant market power on a broad geographic basis" and applied the separation requirement "only to those telephone companies having sufficient market power to engage in anticompetitive activity on a national scale and which possess sufficient resources to enter the competitive market through a separate subsidiary."[36]

Despite the presence of numerous providers in the enhanced services/CPE market, the Commission concluded that only the incumbent monopolies, AT&T and GTE, possessed the market power and opportunity to thwart the competitive provision of CPE and to engage in anticompetitive actions on a national scale as well as the resources to provide service through a separate subsidiary.[37] Accordingly, only those two carriers were subjected to the *Computer II Order* structural separations requirement.[38] All other carriers were free of the structural separations requirement and permitted to offer basic and enhanced services through common

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[34] *Second Computer Inquiry*, Docket No. 20828, Final Decision, 77 FCC 2d 384 (1980) ("Computer II Order"), *modified on reconsideration*, 84 FCC 2d 50 (1980) ("Reconsideration Order"), *further modified on reconsideration*, 88 FCC 2d 512 (1981) ("Further Reconsideration Order"), *aff'd sub nom*. *Computer and Commc'ns Indus. Ass'n v. FCC*, 693 F. 2d 198 (D.C. Cir. 1982), *cert. denied*, 461 U.S. 938 (1983), *aff'd on second further reconsideration*, 56 RR 2d 301 (1984).

[35] *See, e.g., Computer II Order*, ¶¶ 229, 261.

[36] *Id.*, ¶¶ 220, 222.

[37] *Id.*, ¶ 227.

[38] *Id.*, ¶¶ 12, 227-228. GTE was later exempted from the structural separations requirement. *See Reconsideration Order*, ¶ 66. Following divestiture by AT&T, the Bell Operating Companies were subjected to the *Computer II Order* structural separations. *Customer Premises Equipment (BOC Structural Separations)*, CC Docket No. 83-115, ENF 83-5, Report and Order, 95 FCC 2d 1117 (1983).

computer and transmission facilities.[39] In the *Computer II Order*, the Commission explicitly acknowledged that the differentiated regulatory treatment would benefit the public and competitors:

> [A] separate subsidiary requirement is a pragmatic and moderate attempt to enable dominant producers or suppliers whose participation in a given market raises special problems to participate, *while reducing the risks that their customers or competitors will be disadvantaged by such participation*.
>
> . . .
>
> *We are making an investment today in the vitality of a competitive industry* that may be important in serving the needs of the public well into the future. [40]

While recognizing the benefits of structural separation, the Commission limited the application of its rules based on the concern that the structural separations regime might hinder competitive entry into the relevant markets. The Commission explained it "ha[s] no desire to foreclose entry into the enhanced services and CPE markets by any carrier" and that "[f]or these smaller carriers, separation may also result in more limited access to capital markets." [41] Like the *Competitive Carrier Order*, the *Computer II Order* illustrates the Commission's consistent approach of targeting regulations to dominant providers, while leaving non-dominant providers subject to minimal or no regulatory burdens, so as to promote competitive entry and market innovation.

In its *Expanded Interconnection Proceedings* of the early 1990s, the Commission lauded the many projected benefits of requiring Tier 1 local exchange carriers ("LECs") to offer expanded interconnection, including: "fostering increased competition in interstate access markets"; lowering prices which "make resources available for productive investment elsewhere

[39] *Computer II* Order, ¶¶ 12, 228, 231.

[40] *Id.*, ¶¶ 205, 208 (emphasis added).

[41] *Id.*, ¶ 215.

in the economy,"; promoting innovation by "giv[ing] local telephone companies, as well as their competitors and customers, incentives to invest in advanced telecommunications technologies, develop innovative services, and provide existing services more efficiently"; and "creat[ing] greater opportunities for new entrants to compete by enabling them to rely in part on the telecommunications facilities of established service providers."[42]

As in prior proceedings, the Commission's approach to reach these goals was to implement a differentiated regulatory regime which subjected dominant carriers in the markets to regulatory obligations while exempting their competitors from the rules. In the 1992 *Expanded Interconnection Order*, Tier 1 LECs alone were required to offer expanded interconnection, via physical collocation, to interested parties as a means of supporting the Commission's goal of "opening the remaining preserves of monopoly telecommunications service to competition" and "promot[ing] increased competition in the interstate access market."[43]

Two years later, the Commission eliminated the physical collocation mandate and substituted a more liberal virtual collocation mandate in response to the D.C. Circuit's *vacatur* of certain portions of the *Expanded Interconnection Order*.[44] Consistent with the paradigm of the 1992 *Expanded Interconnection Order*, however, the virtual collocation mandate applied only to Tier 1 LECs because those carriers were "dominant carriers and control facilities to which other parties need access in order to provide service."[45] The Commission again explicitly considered

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[42] *Expanded Interconnection with Local Telephone Company Facilities*, CC Docket No. 91-141, Memorandum Opinion and Order, 9 FCC Rcd 5154, ¶ 2 (1994) ("Virtual Collocation Order").

[43] *Expanded Interconnection with Local Telephone Company Facilities et al.*, CC Docket No. 91-141 et al., Report and Order and Notice of Proposed Rulemaking, 7 FCC Rcd 7369, ¶ 1 (1992) ("Expanded Interconnection Order"). NECA pool members were excluded from the mandatory expanded interconnection requirement. *Expanded Interconnection Order*, ¶ 57.

[44] *Virtual Collocation Order*, ¶¶ 2-3.

[45] *Id.*, ¶ 105.

and refrained from imposing the regulation on non-Tier 1 carriers which "lack market power and do not control bottleneck facilities."[46]

The landmark 1996 Telecommunications Act[47] which sparked nationwide entry into local communications markets is, itself, a prime example of a differentiated regulatory regime in its establishment of tailored regulatory requirements, designed to support the goal of "opening all telecommunications markets to competition."[48] Section 251's three-tiered regulatory framework applies the lightest regulatory obligations for all telecommunications carriers, establishes modest regulations for LECs in targeted areas to facilitate competitive access to end user customers and reserves the Commission's most comprehensive regulatory regime for ILECs.[49] A Commission description of the 1996 Act highlights this continued differentiated regulatory approach:

> Similarly, in passing the 1996 Act, Congress, *inter alia*, sought to introduce competition into local telecommunications markets and to facilitate increased competition in telecommunications markets already subject to competition, while at the same time directing the Commission to adjust or eliminate regulations as competition developed and market conditions evolved. In furtherance of these goals, the 1996 Act imposed different obligations on different types of carriers. Thus, it imposed certain minimal obligations on all telecommunications carriers, other obligations on all local exchange carriers (LECs), and certain additional obligations on incumbent LECs, including the obligation to give competitors access to their network elements on an unbundled basis at cost-based rates.[50]

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[46] *Id*.

[47] Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56, codified at 47 U.S.C. §§ 151 *et seq*.

[48] S. Rep. No. 104-230, at 1 (Conf. Rep.) (1996) ("Joint Explanatory Statement"). *See also* 47 U.S.C. § 251(b).

[49] 47 U.S.C. § 251(a)-(c).

[50] *Petition of Qwest Corporation for Forbearance Pursuant to 47 U.S.C. § 160(c) in the Phoenix, Arizona Metropolitan Statistical Area*, 25 FCC Rcd 8622, ¶ 4 (2010) ("2010 Qwest Phoenix Forbearance Order").

Accordingly, post-1996 Act orders continued to reflect the Commission's historical differentiated regulation framework which the 1996 Act carried, in effect, into the local telecommunications marketplace. In addition, as ILECs began to seek forbearance, the touchstone of the Commission's decisions was the dominant/non-dominant paradigm first adopted in the *Competitive Carrier* and *Computer Inquiry* proceedings. At no point did the Commission, even if it did not find the markets in question sufficiently competitive to forbear from regulating the dominant carriers, consider extending regulation to other competitors. Notably, this was the case even when one competitor, such as the cable provider, was the principal focus of the Commission's inquiry if the ILEC faced sufficient competition to justify forbearance.[51]

Indeed, the Commission's tailoring of regulation to apply only to incumbent carriers and only as necessary to promote marketplace competition was so fine-tuned that, even in a limited competition market, the Commission continued to target regulations to only one of the two most dominant market participants. In 2010 the Commission denied a Qwest Corporation request for forbearance, in the Phoenix, Arizona market, from the Section 251(c)(3) unbundled network element ("UNE") obligations that applied only to BOCs and certain ILECs. The denial noted that

[51] *See, e.g.*, *2010 Qwest Phoenix Forbearance Order*. *See also, e.g.*, *Petition of ACS of Anchorage, Inc. Pursuant to Section 10 of the Communications Act of 1934, as Amended, for Forbearance from Sections 251(c)(3) and 252(d)(1) in the Anchorage Study Area*, WC Docket No. 05-281, Memorandum Opinion and Order, 22 FCC Rcd 1958, ¶¶ 1-2 (2007); *Petition of ACS of Anchorage, Inc. Pursuant to Section 10 of the Communications Act of 1934, as Amended (47 USC §160(c)), for Forbearance from Certain Dominant Carrier Regulation of Its Interstate Access Services, and for Forbearance from Title II Regulation of Its Broadband Services, in the Anchorage, Alaska, Incumbent Local Exchange Carrier Study Area*, WC Docket No. 06-109, Memorandum Opinion and Order, 22 FCC Rcd 16304 (2007), *petitions for recon. pending*; *Petitions of Verizon Telephone Companies for Forbearance Pursuant to 47 USC §160(c) in the Boston, New York, Philadelphia, Pittsburgh, Providence and Virginia Beach Metropolitan Statistical Areas, Inc.*, WC Docket No. 06-172, Memorandum Opinion and Order, 22 FCC Rcd 21293 (2007), *remanded*, *Verizon Tel. Cos. v. FCC*, 570 F3d 294 (DC Cir 2009); *Petitions of Qwest Corporation for Forbearance Pursuant to 47 USC §160(c) in the Denver, Minneapolis-St. Paul, Phoenix, and Seattle Metropolitan Statistical Areas*, WC Docket No. 07-97, Memorandum Opinion and Order, 23 FCC Rcd 11729 (2008), *motion for voluntary remand granted*, *Qwest Corp. v. FCC*, No. 08-1257 (DC Cir Aug. 5, 2009).

the market in which Qwest sought forbearance did not promote competitive market conditions as required by the Commission's forbearance standard,[52] even though the wireline retail market in Phoenix had "two dominant providers, Qwest and Cox" with "Cox [a]s Qwest's only competitor that now provides or is soon likely to provide retail service to mass market customers."[53] Despite identifying Cox as Qwest's most significant market competitor, by denying Qwest's forbearance request, the Commission continued to subject only Qwest to greater regulation. Moreover, nowhere in the Order did the Commission even suggest or otherwise mention that it would consider subjecting Cox to the same regulation as Qwest, either because it was necessary to promote market competition or to achieve regulatory parity. In denying Qwest's forbearance request, the Commission specifically rejected any regulatory parity arguments noting " [w]e are not persuaded that Congress intended us to forbear for the sole purpose of achieving regulatory parity between Qwest and the local cable operator . . . we find the potential competitive harms associated with forbearance outweigh any theoretical benefits arising from regulatory parity."[54] This extremely targeted application of regulatory obligations demonstrates the Commission's willingness and consistent practice of tailoring regulation to promote competition and market entry.

The 2013 *USTelecom Forbearance Order* provides yet another example of the Commission's prioritization of the promotion of competitive markets through targeted dominant carrier regulation over imposing regulation on all participants.[55] In that *Order*, the Commission

[52] *2010 Qwest Phoenix Forbearance Order*, ¶ 38 (explaining the forbearance standard).

[53] *Id.*, ¶ 80.

[54] *Id.*, ¶ 107.

[55] *Petition of USTelecom for Forbearance Under 47 U.S.C. §160(c) from Enforcement of Certain Legacy Telecommunications Regulations et al.*, WC Docket No. 12-61 et al., Memorandum Opinion and Order and Report and Order and Further Notice of Proposed Rulemaking and Second Further Notice of Proposed Rulemaking 28 FCC Rcd 7628 (2013) ("USTelecom Forbearance Order").

denied several of USTelecom's requests for forbearance from BOC-specific regulatory obligations. In particular, consistent with its practice of targeting regulation to address market concerns, not regulatory parity, the Commission rebuffed USTelecom claims of market distortion resulting from application of certain rules to only a subset of market participants.[56] The Commission found this argument unavailing as the Commission neither established regulatory parity by subjecting other market participants to the rules nor forbore from applying those rules to affected ILECs on whose behalf USTelecom petitioned.[57] In denying USTelecom's request for forbearance from the Commission's network change notice rules, the Commission explained that the notices are "an important factor in removing potential barriers to competition" and help "ensure continuous interoperability between networks, which benefits the public and competing providers."[58] Similarly, in response to USTelecom's request for forbearance of the separate affiliate requirement, the Commission denied the request with regard to rate-of-return carriers, pending a Commission proceeding to reevaluate the continuing need for these obligations, on the grounds that there was "no evidence to use as a basis for determining they lack exclusionary market power in their respective areas."[59] As the Commission explained in the *USTelecom Order*, this exclusionary market power included the ability to raise competitor costs for providing competitive services, provide lower quality wholesale services to competitors and raise prices on inputs needed by competitors.[60]

In sum, the Commission has pursued consistently over the past 40 years a paradigm of encouraging investment, innovation, and competition in telecommunications markets by

[56] *See, e.g.*, *id.*, ¶¶ 74, 91. USTelecom contended that rule compliance imposed on only "a few competitors among many" distorted competition.

[57] *See, e.g.*, *id*.

[58] *Id.*, ¶ 124.

[59] *Id.*, ¶ 141.

[60] *Id.*, ¶ 237.

applying at most light touch regulation to new entrants while crafting and preserving, until markets are sufficiently competitive, regulatory obligations applicable only to those market participants, i.e., incumbent providers, for which regulation is necessary to prevent anticompetitive activity.

III. THE COMMISSION'S DOMINANT CARRIER REGULATORY PARADIGM HAS A SOUND ECONOMIC AND ANTITRUST BASIS[61]

The leading paradigm in the U.S. (as discussed above) and in other developed countries for managing the transition from regulated (or government-owned) monopoly to competition is the dominant/non-dominant regulatory framework. This approach involves relaxing regulation of the incumbent once competitive entry imposes sufficient price[62] discipline but refraining from price regulation of entrants.[63] The Commission, as discussed in the prior section, and regulators in other countries have found the economic logic for this approach compelling because it provides entrants with incentives to commit effort, initiative, and financial investment and avoids needlessly burdening them with regulation when the ultimate policy goal is its elimination as competition develops.

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[61] The discussion in this section is derived from the appended *Economists' White Paper*.

[62] The term "price" includes all aspects of pricing, including terms and conditions.

[63] The European Union uses the term "Leased Lines" (LL) to refer to BDS. As of March 31, 2016, all but four European countries had no ex-ante regulation on the provision of BDS to retail users. *See* "Market overview table (as at 31/03/2016)," European Commission, https://ec.europa.eu/digital-single-market/en/news/definition-and-analysis-relevant-markets. The four countries are Belgium, Greece, Lithuania, and the United Kingdom. In the United Kingdom, the regulator (OFCOM) has since withdrawn price cap regulation of retail BDS provided by the traditional telephone incumbent, British Telecom ("BT"). *See* Business Connectivity Market Review – Final Statement, OFCOM (Apr. 28, 2016), http://stakeholders.ofcom.org.uk/consultations/bcmr-2015/final-statement/ ("OFCOM 2016 Decision"). No regulation is imposed on entrants. *See* OFCOM 2016 Decision, Figure 1.1. The FNPRM references the May 2015 Draft Decision that OFCOM published for public consultation. See FNPRM, ¶ 524, n.1088. The Final Decision is almost identical, and differs mainly by including stakeholders' replies to the public consultation. To the best of ACA's knowledge, a new entrant has never been subject to price regulation on its BDS in any of the European Union countries.

US antitrust policy too is based on providing incentives for firms to invest and innovate. A fundamental maxim of antitrust policy is that a firm that attained its market position, even monopoly, through legitimate means should not face restrictions on the price it may charge. As Judge Learned Hand wrote in the landmark *Alcoa* decision: "A single producer may be the survivor out of a group of active competitors, merely by virtue of his superior skill, foresight and industry. … The successful competitor, having been urged to compete, must not be turned upon when he wins."[64]

The application of this economic principle to BDS suggests confining price regulation to services offered over network facilities that were largely funded and deployed under a monopoly-franchise regime, and exempting services offered over facilities funded and deployed with no regulatory protection from competition.[65] The main cost component of facilities used for TDM-based BDS is the last-mile copper lines connecting ILEC central offices to customer locations (the added cost of electronics and interoffice transport, if needed, is relatively small).[66] Funding of this legacy copper infrastructure was largely made under a monopoly franchise regime, with a guaranteed return on investment (i.e. low investment risk). Cable service

[64] *United States v. Alcoa*, 148 F.2d 416, 430 (2d Cir. 1945). This principle was affirmed by the Supreme Court in its 2004 *Trinko* decision. *Verizon Commc'ns Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, 407 (2004) ("The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free market system. The opportunity to charge monopoly prices—at least for a short period—is what attracts 'business acumen' in the first place; it induces risk taking that produces innovation and economic growth.").

[65] The FNPRM seems to acknowledge this principle. *See* FNPRM, ¶ 270, n.689 ("The ultimate goal going forward is to apply regulatory obligations on a technology and provider neutral basis where it is necessary to protect and promote competition" but "[t]he application of a technology-neutral framework going forward may require specific treatment of TDM BDS in certain instances, based on past experience and historical practice.").

[66] ACA recognizes that TDM services can be provided over fiber loops and that Ethernet services can be provided over copper loops. However, in both instances, these are more the exceptions than the rule. In any event, the economic principle suggests that the Commission should focus on the underlying transmission media and the regulatory setting under which the relevant investment was made in determining whether to impose price regulation.

providers and other non-incumbents, by contrast, never had monopoly franchises for BDS or other telecommunications services and incurred (and are incurring) substantial investment to deploy facilities to provide BDS, notably by constructing dedicated fiber lines without any guaranteed return or implied protection from competition.[67]

A compelling reason, therefore, to avoid price regulation of non-incumbents is to preserve incentives to invest in and deploy facilities over which to provide higher performance and more innovative services. Subjecting non-incumbents to price caps or some other form of price regulation such as benchmarks that would be applied *ex ante* can undermine such incentives, even if the caps or benchmarks are the same as for the incumbent. For example, an entrant may incur higher costs than the incumbent because it offers higher quality services. Yet, the benefits of the new entrant's services are considerable, providing value and another

[67] Providing residential broadband reportedly was an "add-on" once cable operators upgraded their analog plant to digital systems with two-way capability to compete with satellite video providers. Importantly, however, that costly investment was itself undertaken in a competitive rather than franchise monopoly environment. *See* Gerald R. Faulhaber, "Broadband Deployment: Is Policy in the Way?" in Robert W. Crandall and James H. Alleman Editors, *Broadband: Should We Regulate High-Speed Internet Access?*, 232-233 (AEI-Brookings Joint Center for Regulatory Studies) (2002) ("Faulhaber Paper").

The issue has close parallels with the debate over whether ILECs should have been required to provide "line sharing" to competitors seeking to offer broadband using the high-frequency spectrum of ILEC copper lines. The late Alfred Kahn, a frequent expert for ILECs in regulatory proceedings, nevertheless criticized the FCC's 2003 decision to rescind the line-sharing obligation: "[T]his capacity of the ILECs' copper networks, which was exploitable at something close to zero marginal production cost, would seem to be the archetypal case for mandatory sharing. The copper wires, after all, were inherited from their franchised monopolies, the sharing of which facilities would not discourage future risky investments by the ILECs." He praised, however, the Commission's decision in the same 2003 proceeding to "exempt ILECs' investment in extending fiber to the home or neighborhood from both price regulation and the obligation to share with competitors. These investments … would surely be discouraged by mandatory sharing." *See* Alfred E. Kahn, *Lessons from Deregulation: Telecommunications and Airlines after the Crunch*, 34, 43 (AEI-Brookings Joint Center for Regulatory Studies) (2005). *See also* Faulhaber Paper at 243 ("As the regional Bells seek to deliver broadband to the home using technologies other than the legacy local loop, regulators need to back off requiring line sharing. The rationale for the imposition of line sharing on these companies has always been that the local loop is a bottleneck. If the Bells extend fiber closer to the home, bypassing the legacy local loop, the policy rationale for line sharing simply does not apply. … [A]pplying legacy regulation to new technologies is almost surely inappropriate.").

option to consumers and disciplining the incumbent's prices. Rate regulation of non-incumbents would undermine these benefits.

As noted, the policy of refraining from subjecting non-incumbents to price regulation has been followed by the Commission and in other regulatory jurisdictions. Yet the FNPRM raises the possibility of extending price regulation to non-incumbent providers. For example, the FNPRM inquires: "[W]hich provider(s) should be subject to the specific rules that apply to markets determined non-competitive…[only] the largest BDS provider … ?" and, if so, how should "largest" be defined? "If we borrow upon antitrust principles and Commission precedent that focused on dominance, should we focus on the provider with the largest market share and therefore market power?"[68]

Borrowing from antitrust principles, the use of market power (or a surrogate metric such as market share) as the criterion for regulating non-incumbents would be misplaced because, as noted above, antitrust refrains from price regulation where market power was legitimately obtained.[69] Consider, for instance, a cable provider that built out new fiber lines to serve business customers in locations that the ILEC either could not readily serve (a rare occurrence) or chose not to serve. For that narrow geographic market (assuming that is a proper market definition), that cable provider would show a high market share. Yet, it would conflict with antitrust principles and act as a disincentive to future efforts if the Commission were to regulate that provider's prices after it undertook the costly investment to offer a service that satisfies previously unmet demand. By adopting an approach whereby non-incumbents are not subject to rate regulation, the Commission has avoided such an "uneconomic" outcome. The

[68] FNPRM, ¶ 308.

[69] Of course, should the firm seek to use its market power to leverage the sale of products and services in other markets, antitrust enforcement would come into play.

Commission should only focus on "dominance" to regulate the rates of the legacy monopoly provider and then to determine when that provider has lost enough of its pricing discretion due to competition so as to warrant relaxation of its price regulation.[70]

The FNPRM also asks: "Alternatively, should we apply specific rules to any firm in the non-competitive market that has a near ubiquitous network in the local territory and rights of way? This could result in specific rules applying to more than one firm in the non-competitive area."[71] The only firm today besides the ILEC that may meet these criteria in almost all cases is the cable provider. Subjecting such a competitive provider, whether a cable provider or not, to such rules, including price regulation, would discourage it from undertaking investments needed to upgrade and expand its infrastructure to provide BDS, surely a perverse outcome.[72] In sum, the Commission has no economic basis to regulate the rates of non-incumbents, even *ex ante*, and should not so act.[73].

[70] The policy in the United Kingdom ("UK") is instructive. In its 2016 decision regarding BDS competition and regulation, the UK regulator, OFCOM, found that the incumbent's (BT) most important competitor is a cable TV operator, Virgin Media. Despite Virgin Media's high market shares for certain BDS in certain areas and high market concentration levels, OFCOM did not impose obligations on Virgin Media. *See* OFCOM 2016 Decision: ¶ 3.54 ("Out of BT's rivals, Virgin Media owns and operates the largest physical network, with its network connecting at least one large business in [REDACTED]% of UK postcode sectors."); Table 4.4 (reporting Virgin Media's shares above 50% for Very High Bandwidth ("VHB") Contemporary Interface Symmetric Broadband Origination ("CISBO") services in Central Business Districts ("CBDs") outside London and in the Rest of UK as a whole); ¶ 4.554 ("In the RoUK [Rest of UK], BT's share of CISBO services is very high (57%) and the market is very concentrated, with BT and Virgin holding a combined share of 88%, and no CP apart from Virgin Media gaining a share of more than 5%."); Figure 1.1 (the only two companies deemed to have Significant Market Power ("SMP") and, hence, candidates for ex ante regulatory remedies, are BT and KCOM, the historical telephone incumbent in the city of Hull; and ¶ 1.10 (a finding of SMP in the relevant product and geographic market is a precondition for imposing ex ante regulation on that Communications Provider.).

[71] FNPRM, ¶ 309.

[72] *Id*. (The FNPRM acknowledges the incentives issue by asking: "Given our desire to promote new competitive entry, should new entrants or providers with market share below a certain threshold not be subject to all or some of the proposed [rate regulation and related] rules"? *Id*.).

[73] The INCOMPAS/Verizon proposal seeks to regulate the rates of BDS offered at speeds between 50 Mbps and 1 Gbps in non-competitive areas. These services are in most instances offered over fiber

IV. THE COMMISSION'S LIGHT TOUCH REGULATION OF NON-INCUMBENT BDS PROVIDERS HAS PRODUCED SUBSTANTIAL BENEFITS FOR COMMERCIAL CUSTOMERS AND HAS ACCELERATED THE DEVELOPMENT OF ROBUST FACILITIES-BASED COMPETITION FOR BDS

The FNPRM notes that cable providers have rapidly expanded their BDS offerings in recent years and are continuing to do so:

> Over the past ten years, cable system operators have emerged as significant suppliers of BDS. … In the mid-2000s, cable operators started to strategically expand their reach to serve business customers, focusing initially on small businesses in their franchise areas with less than 20 employees with their "best efforts" Internet broadband service offerings. By 2008, network upgrades allowed … [them] to begin "including cell backhaul in their overall commercial service planning," and by 2011, cable companies were expanding their service to mid-sized businesses with between 20 and 500 employees. In the last year, cable operators have strategically set their sights even higher on serving the needs of the nation's largest business customers.[74]
>
> In 2013, cable companies reported being able to serve something just over 150,000 unique locations (or less than 15 percent of unique locations with BDS demand), almost entirely on their own facilities (cable companies make limited use of UNEs). Looking forward, if cable adds 20 percent more lines every year (in line with historic BDS revenue growth), then at the end of 2016 cable would be able to serve over 260,000 unique locations.[75]

Cable companies provide BDS as defined in the FNPRM predominantly over dedicated fiber to that location.[76] Costs to deploy fiber facilities, including to connect customer sites, are

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infrastructure that was not, at least for non-incumbents, deployed pursuant to a government franchise. As such, there is no sound economic rationale for regulating these services.

[74] FNPRM, ¶ 59.

[75] *Id*., ¶ 221.

[76] *Id*., ¶ 62 ("Based on recent reports by providers, having fiber at the location is a prerequisite for receiving Ethernet services with symmetrical speeds in excess of 10 Mbps with performance guarantees; such Ethernet services are not available to users connected to the cable operators' HFC networks.").

distance-sensitive and establishing such dedicated connections entails significant investment costs.[77]

The patterns described in the FNRPM are consistent with what ACA learned from its members that are not incumbent providers in their service territories ("Smaller Competitive Providers" or "Smaller Providers") as set forth in the attached *ACA BDS Report,* highlights of which are discussed below.[78]

A. BDS Offerings of Smaller Competitive Providers

Smaller competitive providers are primarily offering BDS Ethernet protocol over dedicated fiber to retail and wholesale customers.[79] They offer Ethernet over fiber in bandwidths ranging 5 Mbps to 10 Gbps. A typical provider in a large metropolitan or nearby suburban area provides up to 10 Gbps of symmetrical dedicated bandwidth. A typical provider in a rural area provides up to 1 Gbps of symmetrical dedicated bandwidth. Once fiber is deployed, higher performance is readily provided, and smaller providers have found that customers are seeking higher bandwidth services. Smaller providers with significant urban coverage reported that more than 99 percent of their new Ethernet over fiber connections are in excess of 45 Mbps. Even for providers with rural footprints, an estimated 85 percent of new connections are in excess of 45 Mbps.

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[77] *See id.*, ¶ 231.

[78] *See* Appendix B.

[79] Few smaller providers offer TDM-based BDS. Those that offer it are doing so for their installed base of BDS customers, but they are not actively marketing it new customers.

Smaller providers offer both internet access and customer site-to-site connectivity products as part of their BDS. Products include dedicated internet access, Ethernet Private Line, Ethernet Virtual Private Line and Ethernet LAN products. Services offered generally do not vary geographically; for example, there is demand for multi-point connectivity even in rural areas. Alongside BDS connectivity products, smaller providers may also offer additional services as part of a bundle, including video, voice, colocation services, cloud services, and consultative services.

As discussed above, fiber is the transmission medium of choice for smaller providers to deliver BDS. While a small number of providers have developed, or are developing, the capability to supply BDS over their coaxial access (HFC) network, these are a small minority. Providers prefer fiber because dedicating HFC bandwidth to BDS subtracts from the available shared network capacity available for high speed residential services, including video and broadband, thus harming service quality.[80]

B. BDS Customers of Smaller Competitive Providers

Smaller competitive providers offer BDS to all major customer segments. For instance, government institutions, educational institutions and medical facilities such as hospitals are core segments, particularly in the smallest rural markets, where they often compose the majority of customers of BDS services. Small to medium-sized commercial customers and larger enterprises also are substantial customers of smaller provider BDS. Smaller providers are increasingly offering BDS to Mobile Network Operators ("MNOs") to connect cell towers to mobile switching centers in urban and rural areas. Mobile backhaul accounts for up to 10% of total BDS revenue for smaller providers. Finally, smaller providers are offering wholesale BDS services, enabling other market participants to support their own end customers. The amount varied by provider but can constitute up to an estimated 20 percent of business fiber revenue.

C. BDS Investment by Smaller Competitive Providers

Smaller competitive providers are investing heavily in expanding their fiber networks to connect new customers to their network footprint and to upgrade their core and backhaul

[80] HFC networks today can typically support between 750 MHz and 1 GHz of total spectrum capacity shared across a neighborhood. Some older plants may only support lower spectrum capacity. Residential video requires 300-400 MHz of spectrum, even with extensive compression. In some cases, this can leave limited scope for dedicating spectrum to BDS as it reduces the spectrum available to "best efforts" residential broadband. For instance, one ACA member that is developing Ethernet over HFC is limiting the provision of Ethernet over HFC to no more than two customers per neighborhood to limit the impact on residential services.

network capacity. For new access network deployments, providers are not only seizing immediate revenue opportunities by connecting customers directly, but they are taking a much more strategic and long-term view of the BDS business. For instance, providers are increasingly taking more circuitous routes to pass other potential BDS opportunities and deploying a greater fiber count than necessary to serve the immediate customer (*e.g.*, 48- or 96-count fiber rather than 2- or 4- count fiber) in anticipation of additional customers and to enable future node splits. For core and backhaul upgrades, which are necessary to support new fiber loop deployments, providers are laying new fiber and, to a lesser extent, acquiring existing fiber assets.

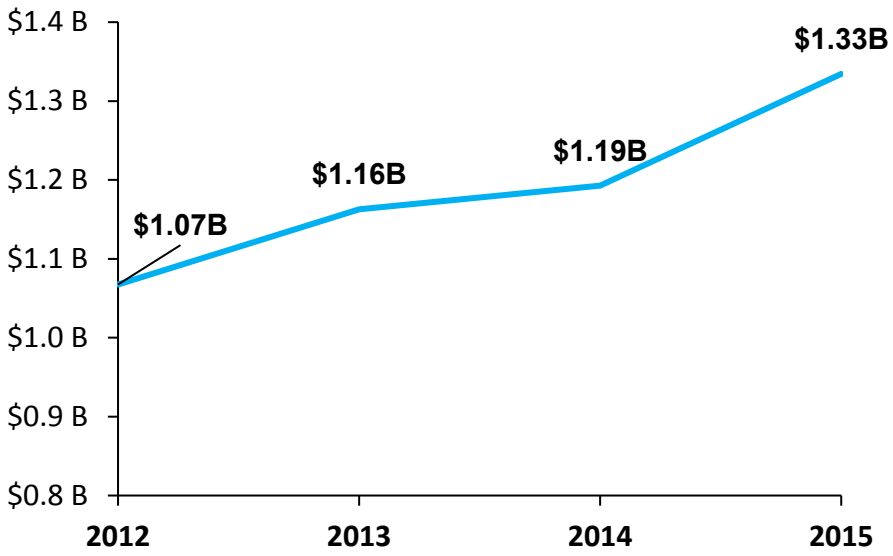
Because of the business opportunities in the BDS market, with revenues expected to increase by 20 percent annually,[81] smaller providers are sinking a tremendous amount into network expansion and upgrades, in some cases multiples of BDS revenue. For instance, some smaller providers with already sizeable BDS revenue bases are making annual investments of approximately two times annual BDS revenue. ACA estimates that its members are spending at least many tens of millions and upwards of $300 million annually to deploy facilities to support the provision of BDS.

Investment trends of smaller providers are similar to that of cable Multiple System Operators ("MSOs"). Overall capital expenditure in commercial services from three of the largest MSOs has been significant and sustained.[82]

[81] *See* Craig Moffett, "Business Services Critical to Cable Growth," *Lightreading* (Dec. 2015).

[82] Data on commercial services capital expenditures is available for Comcast, Charter Communications, and Cablevision, but not for Time Warner Cable (pre-merger) and Cox Communications. Thus, MSO capital expenditures are greater than shown in the chart.

Figure 1: Top MSO Capital Investment in Commercial Services, 2012–2015[83]



This investment by the MSOs has resulted in an expansion of fiber network and fiber connectivity to additional commercial premises. Time Warner Cable (now Charter Communications) has increased the number of fiber-lit buildings from 10,000 in 2012 to 70,000 today.[84] Charter has expanded from 55,000 fiber route miles and 5,500 fiber-lit buildings in 2012 to in excess of 65,000 fiber route miles and 12,000 fiber-lit buildings.[85] Cox Communications has expanded its fiber network from 25,000 fiber route miles in 2012 to

[83] *See* SNL Kagan data aggregation (subscription required) (based on company financial reports).

[84] *See* "Cable Wholesale: Your Guide to Solutions that Shape the Market," Comptel Plus Convention, (Apr. 2012); Time Warner Cable, Carrier Services, https://business.timewarnercable.com/solutions/carrier-services.html (last viewed June 24, 2016).

[85] *See* "Cable Wholesale: Your Guide to Solutions that Shape the Market," Comptel Plus Convention, (Apr. 2012); Charter Communications, Spectrum Business Network Map, https://business.spectrum.com/mediacontent/pdfs/spectrum-business-national-map-2014.pdf (2014).

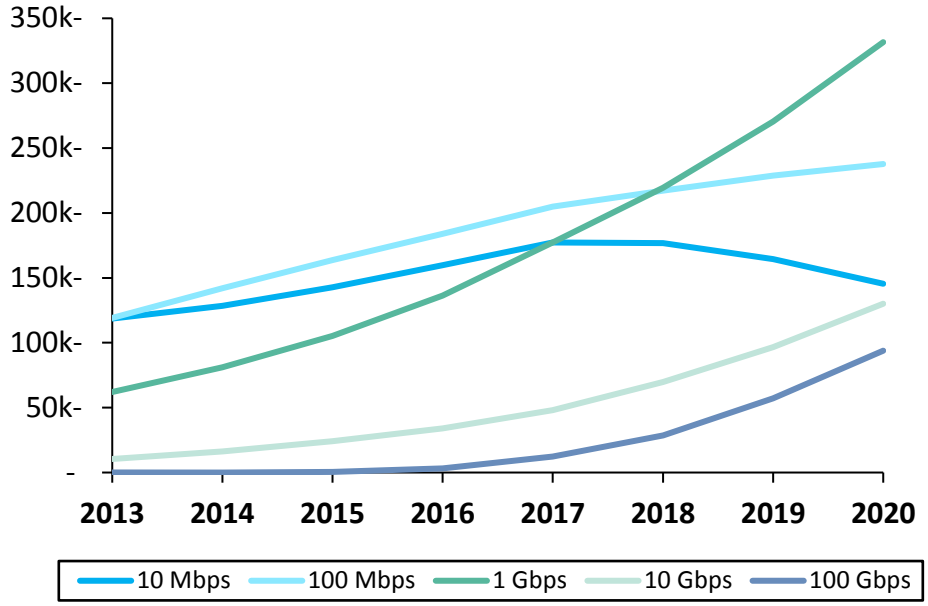
30,000.[86] Over the past five years, Cablevision (now Altice) has expanded its fiber route miles by 50 percent and fiber-lit buildings by 80 percent.[87]

Smaller providers are expected to continue to make substantial investments in networks to support the provision of high performance BDS. Ethernet is a growing market as customers transition from legacy TDM services to support growing business bandwidth requirements. Between 2016 and 2020, the consulting firm Ovum predicts a compound growth rate of 16.1 percent in metro Ethernet connections. Connections at 1 Gbps are forecast to grow at the fastest rate, and lower bandwidth 10 Mbps connections are expected to decline after 2017. To achieve higher bandwidths, businesses and cell towers will need to be connected to a fiber network.

[86] *See* "Cable Wholesale: Your Guide to Solutions that Shape the Market," Comptel Plus Convention, (Apr. 2012); Cox Communications, Carrier Services, https://www.cox.com/business/industry-expertise/carrier-backhaul.html (last viewed June 24, 2016).

[87] Cablevision, Annual Reports (Form 10-K) (2010–2015) (reporting increases from 4,400 lit buildings and 4,350 fiber route miles in December 2010 to 8,000 lit buildings and 6,400 fiber route miles in December 2015).

Figure 2: US Metro Ethernet Connection Forecast by Bandwidth, 2013–2020[88]



Current fiber coverage of commercial buildings is partial. The most recent studies indicate that 46.2 percent of commercial buildings with more than 20 employees are connected by fiber.[89] While there has been a gain of 7 percent since 2013,[90] a majority of commercial buildings are still not fiber-connected. Sustained investment will be required to meet the connectivity needs of the nation's businesses.[91]

Beyond capital investment, smaller providers are investing time and resources to better serve customers. For instance, smaller providers are dedicating additional personnel to their

[88] *See* Ian Redpath, "Ethernet Services Forecast Spreadsheet: 2015-2020" Ovum (September 28, 2015) (subscription required) https://www.ovumkc.com/Products/Telecoms/Intelligent-Networks/Ethernet-Services-Forecast-Spreadsheet-2015-20/Summary.

[89] "U.S. Business Fiber Penetration Reaches 46.2%," Vertical Systems Group (Apr. 14, 2015), http://www.verticalsystems.com/vsgpr/2015-u-s-business-fiber-penetration-reaches-46-2/.

[90] "U.S. Business Fiber Gap Narrows in 2013," Vertical Systems Group (Apr. 3, 2014), http://www.verticalsystems.com/vsgpr/u-s-business-fiber-gap-narrows-in-2013/.

[91] Providers also are investing to increase the availability of redundant network paths, which satisfies customers with a need for highly resilient networks.

BDS sales and customer support teams with the aim of initiating service more quickly and reducing churn. For these providers, support is almost always provided in or near their service territories.

D. BDS Pricing by Smaller Competitive Providers

While some customers may purchase only a BDS "circuit," smaller providers understand that BDS is a complex offering purchased by more sophisticated customers who care about quality, reliability, and many other service attributes. As such, price is only one element in an agreement that is negotiated between the provider and customers, and even then pricing can be complex. BDS pricing varies depending on many factors, including whether it is for a new or ongoing connection, whether multiple locations are connected, and whether additional functionalities are required or additional conditions included.[92]

For new customer connections, smaller providers evaluate the likely returns over the lifetime of a customer contract. These new connections are often priced on an individual case basis ("ICB"), formed of a monthly recurring charge ("MRC") and a one-off non-recurring charge ("NRC"). ICB pricing is used for new connections as there will be many variables that influence the cost to deliver service (*e.g.,* fiber dig costs and variable redundancy requirements).

Smaller providers, especially those operating only in rural areas, are more capital constrained (either lacking access to or having a higher cost of capital) and have less room for error in making investment decisions. Should payback periods be lengthened, such as because of rate regulation, smaller providers would be more reluctant to invest to expand or upgrade

[92] *See* FNPRM, ¶¶ 322-343, 447-491. The FNPRM effectively acknowledges the complexity of BDS offerings by exploring whether and how to regulate terms and conditions.

facilities supporting BDS, especially because proceeding may harm their credit rating or result in the breach of lending covenants.

Smaller provider BDS prices are driven by market forces (with the proviso that, for each bid, an analysis is performed to predict whether returns are acceptable). Factors that influence pricing include service specification, bandwidth procured, contract length, the geographic market, and the prospective customer's market. If a customer requires a high degree of redundancy, for example, this will increase both the cost and price. Higher bandwidth services have a lower $/Mbps metric than lower bandwidth services. Customers that commit to a longer contract length will also see lower $/Mbps. Customers may request varied performance requirements, bandwidth, redundancy, and contract terms, all of which will have a significant impact on service pricing.

Geographic markets may have different pricing due to the competitive intensity faced, customer buying maturity, and, importantly, the availability and density of potential revenue opportunities passed. Providers serving rural areas typically cover a concentration of smaller towns and cities proximate to one another. Some smaller providers offer consistent service pricing across rural markets; this is likely to be driven by similar opportunity density. Some variation in fiber deployment pricing will still exist though, driven by variation in the length of dig required.

Providers serving across urban, suburban and rural areas face differences in the BDS opportunity density, customer buying maturity, and number of providers encountered. ACA has found that providers react differently to these variables and these responses vary over time, particularly in response to competitive forces. At the moment, some providers have lower prices for urban areas, where there tend to be more market participants, compared to rural areas.

However, other providers keep prices constant across geographic areas or have minimal variance.

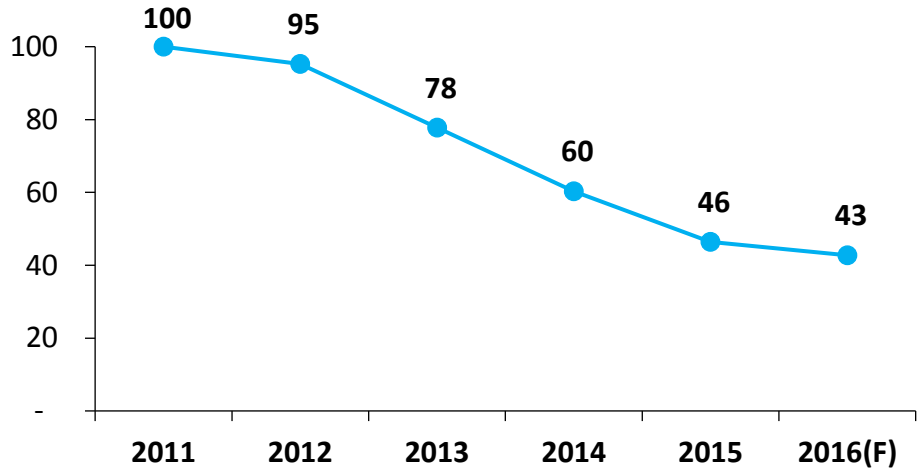
As for pricing by customer type, hospitals and enterprises with the same performance and service requirements receive comparable and reasonably competitive pricing. With E-rate requests for proposals/tenders readily viewable online, the transparency has led to increased competition and reduced margins, therefore benefiting customers. Customer cooperatives also have also formed, providing effective buying power and delivering lower prices for school districts and local governments. As for cellular backhaul, smaller providers view this sector as more competitive and are willing to accept lower margins as the MNOs typically procure larger contracts covering multiple towers.

Smaller providers understand that customers often have unique preferences regarding pricing structure in terms of NRCs versus MRCs. Accordingly, smaller providers do not simply recover the cost of fiber deployment and customer connection through an NRC and the cost of service operation through the MRC. These providers find that most customers prefer to procure their services using an operating expense model and they need to be flexible to meet those needs. This results in the bulk of deployment charges being amortized over a customer's contract period. That said, some customers prefer a higher NRC to meet cash flow requirements over the long run. For example, one provider has an agreement with a hotel group requiring a standard MRC across the franchisee base with any variation in cost being recovered through variable NRCs. As further evidence of the complexity of BDS sales, cable providers may offer further discounts on MRCs or NRCs where additional, unrelated products are procured as part of a deal involving connectivity.

In general, smaller providers' prices for BDS have been decreasing across their markets, whether urban or rural and for all customer segments, retail and wholesale. On average, smaller providers have decreased pricing for Ethernet services by 50 percent over the past five years. These decreases are largely due to competition effects and resulting decreases in margins and not because of decreased costs. In some cases, ACA members report that pricing now stands at around 25-30 percent of where it was five years ago.[93]

The chart below, which is based on pricing for one ACA member with significant operations across urban, suburban and rural markets, shows that average Ethernet pricing has decreased significantly since 2011 (a 57% decrease). Significant decreases in pricing are also noted since 2013, the year for which data was submitted for the 2015 Data Collection. Since 2013, prices have declined by an estimated 45% for this ACA member.

Figure 3: Average Ethernet Pricing Index for an Example ACA Member, 2011-16(F)



[93] As noted earlier, as a point of reference, the FNPRM estimates that the price cap regulation would have resulted in a reduction in prices of between 2.21 percent and 20.43 percent over a 10 year period, 2005-2013. *See* n.23, *supra*.

In sum, Ethernet pricing has been falling at a sustained rate, and further decreases are expected. As a result, BDS customers are reaping and will continue to reap the benefits of lower pricing.

Against this backdrop, there is not a compelling economic case for extending BDS price regulation to cable providers. Because any such regulation would engender longer-term corrosive effects undermining government credibility towards future entrants, the economic case for extending BDS regulation is unconvincing. Moreover, as set forth the below, ACA cable provider members face competition virtually everywhere they provide BDS services, and this competition is, if anything, intensifying.

V. SMALLER CABLE PROVIDERS OFFERING BDS FACE COMPETING PROVIDERS VIRTUALLY EVERYWHERE

Based on discussions with ACA members, in virtually all instances, smaller cable providers compete with other providers in offering BDS. This holds true even in rural areas, where an ILEC is always present and is offering some variant of BDS in competition with a cable provider. In addition, often there is an additional fiber-based BDS supplier, such as an adjacent ILEC building out from its territory or a governmental entity (public utility district, municipality, or state-sponsored agency). In more urban areas, competitors for a cable provider can include traditional fiber CLECs and cable over-builders (some of whom are ACA members).

Further, cable and other providers are concentrating their BDS offerings at higher performance levels – more than 50 Mbps. The FNPRM and Dr. Rysman each observe that competition is more intense for such services than for lower bandwidths.[94] This pattern is

[94] FNPRM, ¶ 2 ("[C]ompetitive entry and potential competition are bringing material competitive benefits to some places and to some products (most notably high bandwidth services)"); *id.*, ¶ 237 ("We also note that the Rysman White Paper concludes that there may not be market power in the supply [of] BDS at bandwidths in excess of approximately 50 Mbps."); *id.*, ¶ 244 ("*Supply of Higher Bandwidth Services May*

explained by the underlying economics. The costs of providing Ethernet over fiber are largely invariant to the level of bandwidth over a wide range.[95] The revenue potential, however, is larger from customers demanding higher bandwidths.[96] Thus, serving a low-demand customer may only be attractive to a provider—typically the ILEC—that already has incurred the fixed costs of deploying a network in that immediate vicinity, whereas serving a higher demand customer can be attractive for a broader universe of potential providers. The revenue potential from such a customer can justify the cost of building a dedicated line from farther away. Ongoing robust growth in demand for higher bandwidth BDS offers further scope for competition, by increasing the revenue potential from existing customers and the density of high-demand customers in many geographic areas.

Additionally, many of the BDS customers – such as enterprises and carriers – are large and sophisticated, which means they have the wherewithal to induce competitive pricing from providers even without the presence of a minimum number of competitors. Sophisticated customers are able to demand long-term contracts that, if not offered by existing providers, render the threat of entry credible. This comports with the findings of Dr. Rysman and the statement in the FNPRM that "potential competition, appropriately defined, is important."[97] ACA members have reported that in Requests for Proposals ("RFPs"), smaller providers often encounter two or three credible competing bidders for the business of potential customers or to

Be Effectively Competitive, at Least Generally."); and, *id.*, App'x B at 212 (Dr. Rysman notes that the results of his study "would suggest that regulation of higher-end products is perhaps not necessary.").

[95] FNPRM, ¶ 226 (noting British Telecom's statement that "the main Ethernet access cost elements – duct, fiber, and electronics – do not vary much across service speeds up to 1 Gbps.").

[96] *Id.*, App'x B at 226 (For example, Dr. Rysman reports in Table 13 that for ILECs in region, average monthly prices are $219 for DS1, $1,314 for DS3 and $3,002 for High Bandwidth services).

[97] FNPRM, ¶ 235.

retain the business of existing customers.

Finally, and importantly, the FNPRM states: "The record and our data collection support the view that competition is growing."[98] ACA members confirm this finding, citing several indicators of growing competition including an increased number of participants in RFPs, and a shortening of contract length in expectation of declining prices.

Given the substantial and growing competition faced by cable providers – all of whom entered BDS provision as unregulated providers – any "pricing" benefits resulting from regulating competitive providers are, at best, dubious. Moreover, imposing regulation on competitive providers will undermine the Commission's primary objective of creating competition as it will delay, if not postpone entirely, further deployments. This result and the other considerable costs of imposing price regulation on competitive providers is discussed below.

VI. SMALLER CABLE PROVIDERS OFFERING BDS AND BDS CUSTOMERS WOULD BE HARMED SUBSTANTIALLY SHOULD THE COMMISSION DECIDE TO REGULATE NON-INCUMBENT PROVIDERS

To offer BDS, cable providers typically need to invest in and deploy dedicated new fiber connections. As discussed herein, this is a risky undertaking, and rate regulation would jeopardize such investment. It would degrade the companies' general credit worthiness, and thereby increase their cost of capital and/or diminish their ability to borrow. One ACA member stated that imposing regulation would "change the game" for its whole business model.

Besides this general cost of capital effect, investment would be scaled back in higher-cost or greater-risk locations. Faced with price caps or some other pricing regulation which invariably will not reflect the cost of buildout, expansion to higher-cost sites would become

[98] *Id*.

uneconomical. This is particularly the case in rural areas where there are limited revenue opportunities. As a result, those areas with poor fiber BDS coverage and limited competition would be least likely to benefit from future investment.

Price regulation of cable BDS also would discourage other riskier investments and the potentially greater public benefits that would justify taking such risks. For example, some cable providers are considering departing from their typical practice of only building out on request and instead expanding their fiber reach to areas in anticipation of future demand. Should price regulation be instituted, such strategic builds are less likely to occur.

Beyond reduced investment, there likely will be significant additional costs stemming from the new regulatory obligations. First, it is important to understand that regulation of BDS prices, terms, and conditions will not be simple. As discussed above, BDS agreements tend to be complex, involving various types of pricing, differentiated terms, and extensive conditions. While the Commission recognizes some of this in the FNRPM,[99] it has not successfully established regulation of even dominant carriers to date, as evidenced by its many decade effort to regulate the BDS offerings of the ILECs.

Even assuming the Commission could successfully regulate BDS, cable providers hitherto have been free from price regulation, and many ACA members have had minimal dealings with the Commission on the host of issues implicated by rate regulation. They would face a steep "learning curve." This would be particularly the case for the smallest providers; coping with new regulation would be disproportionately burdensome for them.

[99] *See id.*, ¶¶ 322-43, 447-91.

The burdens stemming from regulatory compliance would not only include potentially considerable direct expenses, but it would divert time and attention of key personnel away from business development. In essence, it would act as "tax" on providing business data services. Less tangibly, but no less important, subjecting smaller cable providers to price regulation could stifle the entrepreneurial culture of some companies (*e.g*. over-builders) and make them less nimble and innovative at addressing market opportunities. i.e., discourage "business acumen."

Compliance burdens themselves also would serve as a deterrent to investment. Smaller providers that operate in "competitive" markets will be reluctant to undertake further investment, including by responding to RFPs, if it means they will expand into "non-competitive" markets, due to the cost and uncertainty associated with compliance. Compliance burdens also make those members who have yet to invest in BDS more wary about doing so. This, of course, will result in fewer benefits for consumers and less BDS competition – exactly the opposite of what the Commission wishes to achieve.

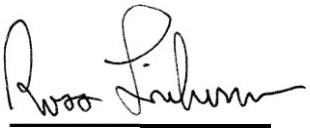
Finally, given the Commission's track record in this proceeding, the next Commission decision will not be the last Commission decision on BDS regulation. The FNPRM discussing regulation of provider(s) in areas deemed non-competitive already poses nine questions.[100] Many of those are likely to spawn further questions and notices. Such complexity and open-endedness is no reflection on FCC staff, which is capable and diligent. It is inherent in the nature of the regulatory process. And once a regulatory structure is in place, experience shows that modifying or ending it as conditions change can be difficult.

[100] *Id*., 308-309.

VII. CONCLUSION

For all of the above reasons, extending BDS regulation to cable providers – or any other entrants – would be ill advised. The Commission should adhere to its policy of limiting price regulation to ILEC services developed and offered pursuant to a monopoly franchise as a transitional measure and relaxing it when sufficient competition develops, as judged by more accurate metrics being developed.

Respectfully submitted,

By: 

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June 28, 2016

Economic Basis for Not Regulating Competitive Providers of Business Data Services

White Paper

Dr. Marius Schwartz and Dr. Federico Mini

June 24, 2016

ACA Comments - Appendix A
WC Docket No. 16-143 et al.
June 28, 2016

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I. Introduction and Summary

This paper is submitted on behalf of the American Cable Association (ACA), a trade association of smaller cable companies and other local providers of broadband and other services, serving smaller communities and rural areas and, as overbuilders, urban areas. Virtually all of these providers are not incumbent local exchange carriers offering business data services (BDS), traditionally known as "special-access" services. For purposes of this paper, we will refer to any such non-incumbent provider as a "cable operator or provider" or "competitive provider." We address some economic issues concerning regulation of BDS raised in the FCC's recent Further Notice of Proposed Rulemaking.[1] Our qualifications are described in Appendix A. The paper draws on our background in economics and telecommunications, public information, and interviews with eight ACA member companies.

BDS involve point-to-point transmission of data over dedicated capacity at certain "speeds" (data rates) and performance attributes (e.g., symmetric speeds and quality guarantees), purchased by business customers, institutions, or other carriers. Traditionally, in a given area these services were provided predominantly by the incumbent local monopolist phone company (ILEC – incumbent local exchange carrier) that had deployed ubiquitous infrastructure in its service area—copper local loops from an ILEC switch or "wire center" to end-user premises ("last mile" links) and higher capacity transport links, typically fiber optic lines, between its wire centers. The FCC historically subjected ILECs to "dominant carrier" regulation for BDS, including tariff obligations and restrictions on permissible rates. The current Notice focuses on geographic areas where the ILEC rates are regulated by price caps.

[1] *Tariff Investigation Order and Further Notice of Proposed Rulemaking*, WC Docket No. 15-247; WC Docket No. 05-25; RM-10593 (April 28, 2016) (hereinafter, "Notice").

Over time, competitive local exchange providers (CLECs) emerged in BDS, most often utilizing a combination of their own fiber facilities for high capacity routes and facilities leased from the ILEC, notably local loops to lower-volume locations and transport between some traffic aggregation points. To access leased loops, CLECs collocated equipment in ILEC wire centers. In 1999, the FCC adopted rules for granting ILECs pricing flexibility in an entire Metropolitan Statistical Area (MSA) based mainly on the extent of CLEC collocation in that MSA.[2] Collocation was taken as a proxy for the extent of actual and likely future competition. In 2012 the FCC suspended these rules, finding that collocation metrics were a "poor proxy" for competitive presence: they overstate competition, for example, because collocators often do not proceed to build their own loops; and understate competition by ignoring competitors that rely on their own facilities with no need for collocation, mainly cable companies. (Notice, ¶ 28)

After an extensive data collection intended to give a clearer picture of the state of BDS competition, the FCC in this Notice proposes to embark on developing a "new regulatory framework" (¶ 4) that would employ a Competitive Market Test across all geographic areas serviced by price cap ILECs (¶ 272). Using criteria to be determined, the Test would classify areas as sufficiently "competitive" to warrant minimal regulation, described in Part V.E of the Notice, or "non-competitive" and subject to additional rules including price regulation, discussed in Part V.F. (See ¶ 270)

[2] Notice, ¶¶ 17-18. A BDS customer may purchase channel termination (access to loops), dedicated transport, or both. The thresholds or "triggers" for granting pricing flexibility were more stringent for termination than for transport, and more stringent for Phase II relief than for Phase I. Phase II grants almost complete pricing flexibility, including to raise (or lower) prices throughout the affected area unconstrained by the Commission's part 61 (tariffing) and part 69 (access charge) rules (albeit still subject to the Sections 201 and 202 proscription against unjust and unreasonable and unjustly and unreasonably discriminatory rates, terms, conditions, and practices). Phase I permits selective price reductions, e.g. volume and term discounts, granted by contract as opposed to having to file a tariff but requires that price cap LECs also maintain their generally available price cap-constrained tariff rates.

Given the apparent unreliability of 1999 collocation triggers as a proxy for competitive presence and vigor, seeking alternative indicators for when to grant pricing flexibility to ILECs is entirely sensible. Disturbingly, however, the Notice suggests that the scope of price regulation may be broadened, by asking: "which provider(s) should be subject to the specific rules that apply to markets determined non-competitive"?[3] Non-ILEC providers hitherto were not subject to price regulation.[4] The elephant in the room, of course, is cable and the Notice hails its efforts:

> The great entry success story had been that of cable. Less than a decade ago cable largely provided no business services of any kind that were materially different from the services marketed to residential customers. Yet, for more than half a decade cable business revenues have experienced compound annual growth rate of 20 percent, starting with the smallest business customers and working their way up to the largest. (¶ 236, footnotes omitted)

Why, then, contemplate extending regulation? Due to FCC forbearance actions since 2006, BDS price regulation now applies largely to legacy TDM services — DS1 and DS3 circuits (offering symmetric 1.5 Mbps and 45 Mbps, respectively) — which the ILECs have historically provided overwhelmingly over copper loops (¶¶ 25, 50). The Notice argues that the new regulatory framework should be "technology-neutral … differences in technology between circuit-switched [TDM] and packet-switched services do not mean that they now exist in different markets." (¶ 6) We agree that competitive assessments should not depend on technology but on price and performance characteristics of various services, and we endorse technological neutrality as a long-run regulatory principle. Nevertheless, extending price

[3] Notice, ¶ 308. See also ¶ 270: "A separate question concerns the scope of regulation in a non-competitive market, and whether it should apply to all or some providers."

[4] "The rates of other providers of BDS have largely been unregulated beyond the just and reasonable requirements applicable to all carriers under sections 201 and 202 of the Act." (¶ 16)

regulation would be economically unwise. Price regulation should be confined to legacy TDM services—where they retain substantial market power—which were developed and offered pursuant to a government provided monopoly franchise.

Section II of this paper explains one basis for this position. The cost of providing an ILEC's TDM services (DS1 and DS3) comes predominantly from the last-mile copper lines. That investment was largely made under a monopoly franchise regime, whereas investment in BDS by entrants—including cable companies—was (and continues to be) made in an unregulated setting without implied protection from competition. There are powerful public policy reasons to refrain from regulating entrants, notably to provide incentives to invest and innovate, and not impose regulation once they have done so.

Section III of the paper argues that, even putting aside these different histories, extending regulation to cable providers is unwarranted given the FCC's professed goals and marketplace facts. The Notice stresses that "competition is best" and that were competition exists, there is little for government to do beyond "traditional oversight." (¶ 5) ACA member companies face ubiquitous competition — wherever they are capable of offering BDS, an ILEC is virtually always present as well. Moreover, cable BDS offerings are concentrated in higher-bandwidth services, where the Notice acknowledges considerable competition already[5] and where the trend is towards increased rather than decreased competition. These facts imply sharply reduced benefits from extending regulation. On the other side of the ledger, the costs would be substantial: financial disincentives for further expansion, and the burdens of complying with likely complex regulation. Those burdens would be especially significant for smaller providers hitherto not subject to FCC price regulation.

[5] Section V.A.10 is titled "Evidence of Market Power in the Delivery of DS1 and DS3 services and Lack Thereof for Higher Bandwidth Services."

In sum, we agree that "packet-based BDS … is a good substitute for TDM-BDS, so packet-based alternatives can place a constraint on TDM prices" (¶ 160) and "it is appropriate to modernize our triggers to ensure that we capture all competitive entrants" (¶ 278). But the latter information should be used solely to obtain a more accurate assessment of when to de-regulate TDM services. The FCC's focus should remain squarely on easing regulation on ILECs as competition develops—and tackling artificial barriers to competition—rather than leveling the playing field downwards by extending regulation to other providers.

II. Logic for Not Regulating Entrants: Provide Incentives and Avoid Needless Burdens

In the US and other sophisticated regulatory jurisdictions, the leading paradigm for managing the transition from regulated (or government-owned) monopoly to competition, the so-called "dominant/non-dominant" framework, involves relaxing regulation of the incumbent once competitive entry imposes sufficient price discipline but refraining from price regulation of entrants. As of March 31, 2016, all but four European countries had no ex-ante regulation on the provision of BDS to retail users.[6] In one of those four countries, the United Kingdom, the regulator (OFCOM) has since withdrawn price cap regulation of retail BDS provided by the traditional telephone incumbent, British Telecom (BT).[7] To our knowledge, a new entrant has never been subject to price regulation on its BDS in any of the European Union countries.

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[6] See "Market overview table (as at 31/03/2016)" available at: https://ec.europa.eu/digital-single-market/en/news/definition-and-analysis-relevant-markets. The European Union uses the term "Leased Lines" (LL) to refer to BDS. The four countries are Belgium, Greece, Lithuania, and the United Kingdom.

[7] See: Business Connectivity Market Review – Final Statement, Published: 28 April 2016, available at: http://stakeholders.ofcom.org.uk/consultations/bcmr-2015/final-statement/ ("OFCOM 2016 Decision"). No regulation is imposed on entrants: see OFCOM 2016 Decision, Figure 1.1. (The FCC's Notice, footnote 1088, references the May 2015 Draft Decision that OFCOM published for public consultation.

There is compelling economic logic for this approach: it provides entrants with incentives to commit effort, initiative, and financial investment; and it avoids needlessly burdening entrants with regulation when the ultimate policy goal is its elimination.

The central goal of providing incentives to invest and innovate underlies the longstanding approach of US antitrust: a firm that attained its position—even monopoly—through legitimate means should not face restrictions on the price it may charge. As Judge Learned Hand wrote in the celebrated *Alcoa* decision: "A single producer may be the survivor out of a group of active competitors, merely by virtue of his superior skill, foresight and industry. … The successful competitor, having been urged to compete, must not be turned upon when he wins."[8]

Respecting this principle in the context of BDS suggests confining price regulation to an ILEC's TDM services (DS1 and DS3). This distinction is not based on technology or a bias against copper. The guiding principle is to confine price regulation to facilities that were largely funded under a monopoly-franchise regime, and exempt investment made under no regulatory protection from competition.[9] The main cost component of TDM services is the last-mile copper lines connecting ILEC central offices to customer locations (the added cost of electronics and

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The Final Decision is almost identical, and differs mainly by including stakeholders' replies to the public consultation.)

[8] *United States v. Alcoa*, 148 F.2d 416 (2d Cir. 1945). This principle was affirmed by the Supreme Court in its 2004 *Trinko* decision: "The mere possession of monopoly power, and the concomitant charging of monopoly prices, is not only not unlawful; it is an important element of the free market system. The opportunity to charge monopoly prices—at least for a short period—is what attracts 'business acumen' in the first place; it induces risk taking that produces innovation and economic growth." *Verizon Communications Inc. v. Law Offices of Curtis V. Trinko, LLP*, 540 U.S. 398, at 407 (2004).

[9] The Notice seems to acknowledge this principle. ¶ 270 states: "The ultimate goal going forward is to apply regulatory obligations on a technology and provider neutral basis where it is necessary to protect and promote competition." But fn. 689 adds the qualifier: "The application of a technology-neutral framework going forward may require specific treatment of TDM BDS in certain instances, based on past experience and historical practice."

interoffice transport, if needed, is fairly small). Investment in this legacy copper infrastructure was largely made under a monopoly franchise regime, with lower investment risk. Cable companies, by contrast, never had monopoly franchises for communications services and incurred (and are incurring) substantial investment to provide BDS, notably dedicated fiber lines without any implied protection from competition.[10] Of course, since the ending of their monopoly franchises the ILECs also have made substantial fiber investments for BDS beyond DS1 and DS3, and the FCC should consider lenient regulatory treatment for such investment as well to the extent it is used to provide additional services beyond those developed under a monopoly franchise.

The issue has close parallels with the debate over whether ILECs should be required to provide "line sharing" to competitors seeking to offer broadband using the high-frequency spectrum of ILEC copper lines. The late Alfred Kahn, a frequent expert for ILECs in regulatory proceedings, nevertheless criticized the FCC's 2003 decision to rescind the line-sharing obligation: *"[T]his capacity of the ILECs' copper networks, which was exploitable at something close to zero marginal production cost, would seem to be the archetypal case for mandatory sharing. The copper wires, after all, were inherited form their franchised monopolies, the sharing of which facilities would not discourage future risky investments by the ILECs.*"[11] He praised, however, the FCC's decision in the same 2003 proceeding to "*exempt ILECs' investment*

[10] Providing *residential* broadband reportedly was an "add-on" once cable operators upgraded their analog plant to digital systems with two-way capability to compete with satellite video providers. Importantly, however, that costly investment was itself undertaken in a competitive rather than franchise monopoly environment. *See* Gerald R. Faulhaber, "Broadband Deployment: Is Policy in the Way?" in Robert W. Crandall and James H. Alleman Editors, *Broadband: Should We Regulate High-Speed Internet Access?* AEI-Brookings Joint Center for Regulatory Studies, 2002 (pp. 232-233).

[11] Alfred E. Kahn, *Lessons from Deregulation: Telecommunications and Airlines after the Crunch*, AEI-Brookings Joint Center for Regulatory Studies, 2005 (p. 43).

in extending fiber to the home or neighborhood from both price regulation and the obligation to share with competitors. These investments … would surely be discouraged by mandatory sharing." (Kahn 2004, p. 34) Gerald Faulhaber supported the same distinction.[12]

A compelling reason, therefore, to avoid price regulation of entrants is to preserve incentives to invest and innovate. Subjecting entrants to price caps can undermine such incentives, even if the caps are the same as for the incumbent. For example, an entrant may incur higher costs than the incumbent because it offers higher quality services, in which case entry could provide value to consumers and price discipline on the incumbent, yet be discouraged by the price caps. Alternatively, if price caps are not binding on entrants, they impose needless administrative burdens.

As noted, the policy of refraining from subjecting entrants to price regulation has been followed in leading regulatory jurisdictions. Yet the Notice raises the possibility of extending price regulation to entrants. In part V.D.5, it poses a series of questions. For example, "[W]hich provider(s) should be subject to the specific rules that apply to markets determined non-competitive … [only] the largest BDS provider … ?" and, if so, how should 'largest' be defined? "[I]f we borrow upon antitrust principles and Commission precedent that focused on dominance, should we focus on the provider with the largest market share and therefore market power?" (¶ 308)

Borrowing from antitrust principles, the use of market share or market power as the criterion would be misplaced because, as noted above, antitrust refrains from price regulation

[12] "As the regional Bells seek to deliver broadband to the home using technologies other than the legacy local loop, regulators need to back off requiring line sharing. The rationale for the imposition of line sharing on these companies has always been that the local loop is a bottleneck. If the Bells extend fiber closer to the home, bypassing the legacy local loop, the policy rationale for line sharing simply does not apply. … [A]pplying legacy regulation to new technologies is almost surely inappropriate." Faulhaber (2002), p. 243.

where market power was legitimately obtained. Hypothetically, consider a cable company that built out new fiber lines to serve business customers in locations that the ILEC either could not readily serve (a rare occurrence) or chose not to (possibly due to a different business judgment or regulatory disincentives). In a narrowly defined geographic market that cable company would show a high market share, and possibly considerable "market power." Yet regulating its prices after it undertook the costly investment to offer a service that satisfies previously unmet demand would conflict with antitrust principles and act as a disincentive to future efforts. Applying the Commission's precedent of focusing on "dominance" would be appropriate only for purposes of determining when the legacy monopoly provider has lost enough of its pricing discretion due to competition so as to warrant relaxation of its price regulation.

The UK policy is again instructive. OFCOM's comprehensive 2016 decision notes that BT's most important competitor is a cable TV operator, Virgin Media.[13] Despite Virgin Media's high market shares for certain BDS in certain areas[14] and high market concentration levels,[15] OFCOM did not impose obligations on Virgin Media.[16]

[13] "Out of BT's rivals, Virgin Media owns and operates the largest physical network, with its network connecting at least one large business in [REDACTED]% of UK postcode sectors." OFCOM 2016 Decision, ¶ 3.54.

[14] See Table 4.4 in the OFCOM Decision, reporting Virgin Media's shares above 50% for Very High Bandwidth (VHB) Contemporary Interface Symmetric Broadband Origination (CISBO) services in Central Business Districts (CBDs) outside London and in the Rest of UK as a whole.

[15] "In the RoUK [Rest of UK], BT's share of CISBO services is very high (57%) and the market is very concentrated, with BT and Virgin holding a combined share of 88%, and no CP apart from Virgin Media gaining a share of more than 5%." OFCOM 2016 Decision, ¶ 4.554.

[16] Figure 1.1 shows that the only two companies deemed to have Significant Market Power (SMP) and, hence, candidates for ex ante regulatory remedies, are BT and KCOM, the historical telephone incumbent in the city of Hull. (A finding of SMP in the relevant product and geographic market is a precondition for imposing ex ante regulation on that Communications Provider. OFCOM 2016 Decision, ¶ 1.10.)

The Notice goes on to ask: "Alternatively, should we apply specific rules to any firm in the non-competitive market that has a near ubiquitous network in the local territory and rights of way? This could result in specific rules applying to more than one firm in the non-competitive area." (¶ 309, footnote omitted) The only firm besides the ILEC that may meet these criteria is the local cable company. Subjecting it to such rules, including price regulation, would discourage it from upgrading and expanding its infrastructure to provide BDS, surely a perverse outcome. The Notice acknowledges the incentives issue by asking: "Given our desire to promote new competitive entry, should new entrants or providers with market share below a certain threshold not be subject to all or some of the proposed rules"? This caveat is equally applicable to cable companies that have obtained a "large" share by virtue of competitive investment.

III. The Missing Case for Regulating Cable BDS

Section A below notes that cable investment in BDS—made in an unregulated regime—has been substantial and is ongoing. Section B points out that, unlike ILECs in many cases, cable companies face ubiquitous competition, thereby diminishing the value of subjecting them to regulation. Section C observes that the costs of such regulation would be substantial.

A. Cable Company Investments and Efforts to Provide Business Data Services

The Notice points out that cable companies have rapidly expanded their BDS offerings in recent years and are continuing to do so:

> Over the past ten years, cable system operators have emerged as significant suppliers of BDS. … In the mid-2000s, cable operators started to strategically expand their reach to serve business customers, focusing initially on small businesses in their franchise areas with less than 20 employees with their "best efforts" Internet broadband service offerings. By 2008, network upgrades allowed … [them] to begin "including cell backhaul in their overall

> commercial service planning," and by 2011, cable companies were expanding their service to mid-sized businesses with between 20 and 500 employees. In the last year, cable operators have strategically set their sights even higher on serving the needs of the nation's largest business customers. (¶ 59)
>
> In 2013, cable companies reported being able to serve something just over 150,000 unique locations (or less than 15 percent of unique locations with BDS demand), almost entirely on their own facilities (cable companies make limited use of UNEs). Looking forward, if cable adds 20 percent more lines every year (in line with historic BDS revenue growth), then at the end of 2016 cable would be able to serve over 260,000 unique locations. (¶ 221)

Cable companies provide BDS as defined in the Notice predominantly over dedicated fiber to that location.[17] Loop deployment costs are distance-sensitive and establishing such dedicated connections entails significant investment costs. (¶ 231)

The patterns described in the Notice are consistent with what we learned from ACA member interviews. Cable companies began serving business customers with best-efforts broadband offerings (excluded from the Notice's definition of BDS) to small and medium businesses. Such services, provided predominantly over hybrid fiber coax (HFC) using the DOCSIS 3.0 protocol, require significant capacity upgrades in the core network to accommodate the additional data traffic, especially in the case of older systems in rural areas.

For customers demanding higher and symmetric bandwidth, as well as greater quality (e.g. reliability, redundancy, and restoration)—enterprises, institutions such as schools, libraries and hospitals, and other carriers—cable companies provide dedicated fiber links to the customer

[17] "Based on recent reports by providers, having fiber at the location is a prerequisite for receiving Ethernet services with symmetrical speeds in excess of 10 Mbps with performance guarantees; such Ethernet services are not available to users connected to the cable operators' HFC networks." (¶ 62) (The Notice formally defines BDS to include symmetric speeds above 1.5 Mbps, but the vast majority of cable offerings beyond "best-efforts" involve higher speeds.)

premises. Our interviewees report that virtually all their Ethernet services are offered over dedicated fiber. These links require new construction, as well as upgrades to the core network.

Though anecdotal, the interviews illustrate the efforts needed to expand BDS and the resulting benefits to customers. Several companies acquired under-performing older systems and upgraded them. They described their business model as bringing the full spectrum of data services, at a consistent quality, to smaller and rural markets. Several reported undercutting the ILEC's price or offering greater bandwidth for the same price. Some attributed their success to being more agile and responsive than the ILEC, offering superior quality or more innovative technology. (Such differences, in turn, might be partly due to disincentive effects of price regulation on the ILECs.) Our interviewees report plans to continue robust expansion of such services assuming no change in their unregulated status.

Against this backdrop, is there a compelling economic case for extending BDS price regulation to cable providers? Even setting aside the longer-term corrosive effects from undermining government credibility towards future entrants, the economic case for extending BDS regulation is unconvincing. ACA member companies face competition virtually everywhere they provide BDS services, and this competition is, if anything, intensifying. These facts dilute the potential benefits from subjecting them to regulation. And such regulation would entail considerable costs.

B. ACA Member Companies Face Competition Virtually Everywhere

In assessing the need for price regulation of ILECs, the Notice and the paper by Dr. Mark Rysman (Appendix B of the Notice) argue that competition to the ILEC is often absent,

especially for lower bandwidth services (DS1 and DS3).[18] Based on our interviews, the picture is quite different from the standpoint of smaller cable companies. They virtually always face competition.

The extent of competition does vary by geographic areas, generally decreasing as customer density falls. There tend to be fewer competitors as one moves from urban and suburban areas to rural areas. However, even in rural areas an ILEC is always present and, with a few exceptions, capable of offering BDS in competition with a cable provider. Often there is an additional fiber-based BDS supplier, such as an adjacent ILEC building out from its territory, or a governmental entity (public utility district, municipality, or state-sponsored agency). In less rural areas, competitors can include traditional fiber CLECs and cable over-builders (some ACA members are themselves over-builders and compete against the local ILEC and incumbent cable company).

Furthermore, cable company BDS offerings as defined in the Notice are overwhelmingly concentrated in higher bandwidths (above the 45 Mbps of ILECs' DS3). The Notice and Dr. Rysman observe that competition is more intense for such services than for lower bandwidths.[19] This pattern is explained by the underlying economics. The costs of providing Ethernet over

[18] The Notice remarks that ILECs in their home territories "remain a ubiquitous presence, easily able to provide BDS to virtually all enterprise locations in a manner that no other competitor can duplicate" (¶ 2); cites a filing showing that "approximately 73 percent of special access purchaser locations are served by a single ILEC" (¶ 181); and cites another filing showing that "an ILEC was the sole provider of special access services" in about two thirds of the census blocks included in the dataset (¶ 185).

[19] ¶ 2 states: "[C]ompetitive entry and potential competition are bringing material competitive benefits to some places and to some products (most notably high bandwidth services)"; ¶ 237 states: "We also note that the Rysman White Paper concludes that there may not be market power in the supply [of] BDS at bandwidths in excess of approximately 50 Mbps." ¶ 244 states: "*Supply of Higher Bandwidth Services May Be Effectively Competitive, at Least Generally*." Dr. Rysman notes that the results of his study "would suggest that regulation of higher-end products is perhaps not necessary." (p. 212)

fiber are largely invariant to the level of bandwidth over a wide range.[20] The revenue potential, however, is larger from customers demanding higher bandwidths.[21] Thus, serving a low-demand customer may only be attractive to a provider—typically the ILEC—that already has incurred the fixed costs of deploying a network in that immediate vicinity, whereas serving a higher demand customer can be attractive for a broader universe of potential providers. The revenue potential from such a customer can justify the cost of building a dedicated line from farther away. Ongoing robust growth in demand for higher bandwidth BDS offers further scope for competition, by increasing the revenue potential from existing customers and the density of high-demand customers in many geographic areas.

Additionally, many of the BDS customers—such as enterprises and carriers—are large and sophisticated and sometimes can induce competitive pricing even without requiring competitors to deploy new facilities, by offering long-term contracts that render the threat of entry credible. This comports with the findings of Dr. Rysman and the statement in the Notice that "potential competition, appropriately defined, is important." (¶ 235) Our interviews reported that in Requests for Proposals (RFPs) they often encounter two or three credible bidders.

Finally, and importantly, the Notice (¶ 235) states: "The record and our data collection support the view that competition is growing." Our respondents confirm this finding, citing several indicators of growing competition including an increased number of participants in RFPs, and a shortening of contract length in expectation of declining prices.

Given the substantial and growing competition faced by cable providers—all of whom

[20] The Notice (¶ 226) cites British Telecom's statement that "the main Ethernet access cost elements – duct, fiber, and electronics – do not vary much across service speeds up to 1 Gbps."

[21] For example, Rysman, Table 13, reports that for ILECs in region, average monthly price was $219 for DS1, $1,314 for DS3 and $3,002 for High Bandwidth services.

entered BDS provision as unregulated providers—the benefits of subjecting them to price regulation are dubious. And the costs would be considerable.

C. Harms from Subjecting Smaller Cable Providers to Price Regulation

Reduced Investment. A consistent theme emerging from the interviews is that cable investment to offer BDS as defined in the Notice, that typically requires building dedicated new fiber connections, is risky. Several interviewees stated that their internal rate of return threshold for undertaking such investment is quite high and/or the payback period must be quite short. Rate regulation would jeopardize such investment. It would degrade the companies' general credit worthiness, and thereby increase their cost of capital and/or diminish their ability to borrow. One company stated that imposing regulation would "change the game" for its whole business model.

Besides this general cost of capital effect, investment would be scaled back in higher-cost or greater-risk locations. Faced with price caps that invariably will not always reflect differences in the cost of buildout, expansion to some higher-cost sites would become uneconomical. We were told that costs of service can vary considerably, and are site-specific and deal-specific. Also, some cable companies are considering departing from their typical practice of only building out on request and instead expanding their fiber reach to areas in anticipation of future demand. Price regulation of cable BDS would discourage such riskier investment.

Further Costs. Beyond reduced investment, there likely will be significant additional costs stemming from the new regulatory obligations. Cable companies hitherto have been free from price regulation, and many ACA members have had minimal dealings with the FCC on the host of issues implicated by rate regulation. They would face a steep "learning curve." In addition, many ACA's members are smaller companies. Since regulatory compliance entails

some "overhead" costs, coping with new regulation would be disproportionately burdensome for them.

The burdens likely would include not only direct expenses but also diverting time and attention of key personnel away from business development, and generally act as "tax" on providing business data services. Less tangibly, but no less important, subjecting smaller cable operators to FCC price regulation could stifle the entrepreneurial culture of some companies (e.g. over-builders) and make them less nimble and innovative at addressing market opportunities—discourage "business acumen."

The following is a sample of reactions from our interviews. One company stated that since its residential pricing is unregulated, if its business services were regulated it likely would have to create a separate subsidiary from the residential side, driving up costs.[22]. Others stated that regulatory compliance costs are "very real" and would be a "big burden." Small operators do not understand "FCC language," and the extra time and "intimidation" factors would be daunting.

Finally, the regulation being discussed is unlikely to be "simple." The Notice proposes to regulate at a granular level, both geographically and by customer/service categories. Two paragraphs (308-309) discussing regulation of provider(s) in areas deemed Non-Competitive already pose nine questions. Many of those are likely to spawn further questions and Notices. Such complexity and open-endedness is no reflection on FCC staff, which is capable and diligent. It is inherent in the nature of the regulatory process. And once a regulatory structure is in place, modifying or ending it as conditions change can be difficult.

[22] Moreover, although BDS provision requires deployment of dedicated fiber access lines, certain network facilities and operations are shared between these customer segments today, which could complicate BDS price regulation and compliance.

For all of the above reasons, extending BDS regulation to cable providers—or any other entrants—would be ill advised. The FCC should adhere to its policy of limiting price regulation to ILEC services developed and offered pursuant to a monopoly franchise as a transitional measure and relaxing it when sufficient competition develops, as judged by more accurate metrics being developed.

Appendix A: Qualifications

Dr. Marius Schwartz Biography

Marius Schwartz is a Professor of Economics at Georgetown University. His teaching and research are in industrial organization, competition, and regulation, including topics such as price discrimination, vertical control, network effects, and exclusionary conduct. He earned a B.Sc. degree from the London School of Economics with 1st class honors, and a PhD, also in economics, from the University of California at Los Angeles.

From June 2011 to December 2012 he was the Chief Economist at the U.S. Federal Communications Commission. From September 1998 to April 2000 he served at the Antitrust Division of the U.S. Department of Justice (DOJ) as Economics Director of Enforcement, and for six months also as Acting Deputy Assistant Attorney General for Economics (chief economist). From April 1995 to June 1996 he served as the Senior Economist for industrial organization at the President's Council of Economic Advisers. He has been an economic expert on competition and regulation matters for the DOJ, Federal Trade Commission, and private parties, and is senior consultant to Compass Lexecon.

Dr. Federico Mini Biography

Dr. Federico Mini is an economist specializing in telecommunications and antitrust. He earned a BA in Business and Economics, summa cum laude, from University of Florence, Italy, and a PhD in economics from Georgetown University with distinction. A chapter of his dissertation on the impact of the U.S. 1996 Telecommunications Act was published in the *Journal of Industrial Economics*. He has also published in *International Review of Applied Economics*; *Mercato, Concorrenza e Regole*; *Economia Pubblica*; World Bank sectoral studies and IMF Staff Papers.

After several years at the World Bank, from 2001 to 2005 he served as an economist at the Italian communications industry regulator (AGCOM), where he led market reviews AGCOM conducted under the EU regulatory framework, and represented Italy in various regulatory and competition fora at the EU and the OECD. From February 2005 to July 2006, he was a member of the communications practice at NERA's London office, working on regulatory and competition issues. From 2006 to February 2016, he worked in Bates White's communications practice and antitrust practice in Washington DC.

ACA Operator Member Activities in the Market for Business Data Services

June 2016

Contents

1. Introduction

1.1.1. The FCC has evaluated the Business Data Services (BDS) market over the past several decades, attempting a number of approaches to regulate the incumbent local exchange carrier to safeguard consumers of these services, including by promoting competition and deregulating incumbent local exchange carriers (ILECs) where competition was predicted take root.

1.1.2. In the Further Notice of Proposed Rulemaking (FNPRM) – FCC 16-54 – the FCC proposes to apply tests to classify whether a given geographical or customer market is sufficiently competitive:

- Competitive markets would be subject to very limited regulatory oversight.
- Non-competitive markets would be subject to more extensive regulatory oversight, including price cap regulations.

1.1.3. In a departure from previous regulatory paradigms in US BDS regulation, the FCC inquires about regulating all providers of BDS in a non-competitive market. Previous regulations have been limited to regulating the prices of the ILECs in areas where the carriers had market power resulting from a government-sanctioned monopoly.

1.1.4. To respond to the FCC's FNPRM, ACA and its consultants conducted research to investigate the activities of ACA cable operator members (from herein 'members') in the supply of BDS. This research covered:

- Primary research with members that are supplying BDS;
- Analysis of member-provided data;
- Supporting secondary research from public sources, as referenced.

1.1.5. Throughout this report, we conform to the FCC's definition of BDS as a telecommunications service that:

- Transports data between two or more designated points;
- Has a symmetrical bandwidth (upstream and downstream) of at least 1.5 Mbps;
- Has prescribed performance requirements (that may include bandwidth, reliability, latency, jitter and/or packet loss).

1.1.6. Our interviews cover a diversity of members to ensure representative conclusions were achieved. Members vary from localized operators covering several towns and cities to operators that span across entire regions. Some members operate entirely in rural areas while others also compete in both suburban and heavily urbanized markets. Members interviewed had BDS network coverage across all mainland Census Bureau-designated US regions. There are also differences in the maturity of BDS offerings, with some members having made investments some time ago and others much more recently.

1.1.7. For each member, we interviewed senior management in various roles within the company. Roles interviewed included Heads of Business Sales, Heads of Business Services, and company directors (e.g. CEOs, CTOs).

1.1.8. From our research, we identified that members have made significant and continuing investments into the provision of BDS, and their market activity has resulted in declining prices. We further highlight some of the positive practices employed by our members for both end customers and other BDS market participants and explore the impact the proposed regulations would have on our members' BDS businesses.

2. Overview of ACA Member Activities in BDS

2.1. BDS Service Offerings

2.1.1. In member interviews,[1] a consistent picture emerged of BDS services available to customers. In all cases the primary BDS offered is an Ethernet protocol service provided over dedicated fiber to retail and wholesale customers.

2.1.2. BDS delivered by our members via Ethernet over fiber ranges in bandwidth from 5 Mbps to 10 Gbps. A typical member with BDS coverage in a large US metropolis may provide up to 10 Gbps of symmetrical dedicated bandwidth. These larger providers also serve suburban and rural area where they are similarly capable of providing such bandwidths. For a typical member with BDS coverage of rural areas, up to 1 Gbps of symmetrical dedicated bandwidth could be provided.

2.1.3. With a range of bandwidth available, customers of dedicated Ethernet over fiber services can procure based on their own needs. Demand for higher average symmetrical bandwidths is greater in urban areas compared to rural areas. Members with significant urban coverage reported 99%+ of their new Ethernet over fiber connections to be in excess of 45 Mbps (the maximum bandwidth that can be provided by a DS3 connection). Even for members with rural footprints, an estimated 85% of new connections was reported to be in excess of 45 Mbps.

2.1.4. Fiber is the dominant medium that our members use to deliver BDS to customers. Some members have developed, or are developing, the capability to supply BDS over their coaxial access (HFC) network; however, we found these members to be in the minority and the trend is to offer all-fiber based services. Members raised concerns over the impact that dedicating HFC bandwidth to BDS would have on residential broadband service quality. BDS require dedicated capacity that subtracts from the available shared network capacity available for high speed residential services, including video and broadband:

- HFC networks today can typically support between 750 MHz and 1 GHz of total spectrum capacity shared across a neighborhood, as is the case for 79% of ACA cable members. Some older plants may only support lower spectrum capacity (6% of ACA cable members have under 550 MHz of total spectrum capacity)[2];
- Residential video requires significant spectrum allocation (one member explained that 300-400 MHz of spectrum is required for a full spectrum of video products, even with extensive compression);
- In some cases, this can leave limited scope for dedicating spectrum to BDS as it reduces the spectrum available to “best efforts” residential broadband;
- One member, which was in the process of developing Ethernet over HFC, mentioned that its own network engineering team had committed the business to

[1] “Members” in this report refers to those interviewed for the report. As noted, these members are of different sizes, have different operating areas, and are in different states of maturity in providing BDS. Because these providers pass a significant percentage of the commercial locations passed by all members in aggregate, ACA believes they are representative of the entire membership.

[2] American Cable Association, Connecting Hometown America: How The Small Operators Of ACA Are Having A Big Impact, March 2014 – Availability of Network Bandwidth in ACA Cable Operators’ Network, based on data from NCTC

deliver no more than two Ethernet over HFC customers per neighborhood in order to limit the impact on residential services.

2.1.5. The availability of bandwidth and the impact on other services was cited as the primary reason not to deploy Ethernet over HFC. There are also incremental costs associated with the deployment of Ethernet over HFC. There did not appear to be a link between different geographical markets and the availability of Ethernet over HFC.

2.1.6. TDM services were generally not offered by our members. We found select instances where there were small proportions of TDM in the BDS installed base, but these services were no longer proactively offered to customers. We also found that members occasionally offered an Ethernet over fiber service with a TDM interface to enable interoperability with customers' legacy hardware.

2.1.7. Members offer both internet access and customer site-to-site connectivity products from their BDS. Products include dedicated internet access, Ethernet Private Line, Ethernet Virtual Private Line and Ethernet LAN products. Services offered generally do not vary geographically; for example, there is demand for multi-point connectivity even in rural areas. Both members in urban and rural areas provided a comprehensive suite of internet access and customer site-to-site connectivity products.

2.1.8. Alongside BDS connectivity products, our members may also provide additional services as part of a bundle. Services include:

- Video, which is particularly popular with certain customer segments such as hotels, hospitals and universities which deliver video services to their customers and residents;
- Voice, which is offered by members across geographical markets in the form of business lines and hosted PBX solutions;
- Further services that may be offered alongside BDS such as colocation services, cloud services (e.g. disaster recovery), and consultative services.

2.2. Customers of BDS Services

2.2.1. In aggregate, our members provide BDS to all major customer segments. A member's focus on customer segments is mostly dependent on the composition of businesses within a given region.

2.2.2. Government institutions, educational institutions and medical facilities such as hospitals are core segments common across geographical markets. These may form the majority of customers of BDS services for the smallest rural markets, according to our discussions with members. School districts and local government largely procure services from our members or their competitors, but we did find examples of networks deployed by local government. Occasionally these municipal or county networks were also providers of BDS to the wider business community.

2.2.3. SMEs and enterprises were also core purchasers of these services. The presence of these purchasers varies depending on the market:

- For some SMEs, "best efforts" data services may be sufficient for connectivity needs. This means a high density of SMEs does not necessarily mean higher demand for BDS services; the scale and sector of a business are important considerations too.
- Enterprise-scale customers were found to be present in both urban/suburban and rural markets; however, requirements varied by geography. In non-metro markets some enterprise-scale customers are limited to a single site. These customers generally would not require multi-site connectivity products such as E-LANs. Enterprises in metro areas are typically larger and are more likely to buy multi-site connectivity.

2.2.4. Mobile Network Operators (MNOs) procure BDS to connect cell towers to mobile switching centers. We found examples of members that serve cell towers and examples of others that are beginning to develop their cellular backhaul business:

- One larger provider, with a network footprint spanning urban and rural areas, noted that they serve MNOs. Another similarly large and geographically-expansive member does not currently serve MNOs, but is planning to supply cellular backhaul in the future.
- This picture held true for members in rural areas, with providers that both did and did not provide cellular backhaul. Smaller, rural-focused members noted that MNOs preferred to procure on a regional basis and that there was a perceived bias towards larger BDS suppliers. Our rural members typically (but not exclusively) provided cellular backhaul to a subset of cell towers, on a wholesale basis, as part of a partners' larger contractual agreement with the MNO.
- For those providing cellular backhaul, it was an important part of our members' BDS businesses and composed up to 10% of total BDS revenue. Where members had yet to supply cellular backhaul, this was not indicative of a lack of effort to supply MNOs.

2.2.5. All interviewed members provide wholesale BDS services, enabling other market participants (including ILECs, CLECs, or other MSOs) to support their own end customers. This varied from a small portion of member's businesses, but in many cases was further developed (in one case, forming up to an estimated 20% of business fiber revenue).

3. Investments to Support BDS and Innovation

3.1. Significant Investments have been made to Support BDS

3.1.1. Discussions with our members highlighted that they are investing heavily in expanding their fiber networks. This investment covers both connecting new customers to their network footprint and upgrading their core and backhaul network capacity.

3.1.2. As elaborated on below, our members have invested and are investing substantial capital in last-mile fiber connectivity, driven by demand to serve new customers.

3.1.3. In digging new fiber access paths, members have historically taken the shortest path to connect customers. Increasingly, they are considering more circuitous routes to pass other potential BDS opportunities. Members that were considering building strategic routes viewed the potential benefits as outweighing the reduction in margins on their assured opportunities.

3.1.4. As well as considering the route taken to connect customers, our members report they would build a greater fiber count than necessary in anticipation of further customers and to enable future node splits. One member specified that they would build with 48- or 96-count fiber, rather than 2- or 4- count fiber.

3.1.5. We also heard of investments made to decrease cost to serve when extending the access network to new customers. 'Overlashing' fiber to existing aerial plant had been employed to decrease cost to build out to customers. This lowers the costs our members need to recover, hence decreasing customer prices. By investing in DWDM technology in the core and backhaul that allows fiber to be shared by multiple customers, last mile access can be delivered from the nearest splice point rather than the nearest node. This also decreases the last mile construction costs and reduces customer prices.

3.1.6. Legacy cable systems may not have high-count fiber in their core and backhaul networks. Members had historically planned their network capacity to provide residential video services. The higher bandwidths required for both BDS and faster residential services require upgrades to the core and backhaul capacity. As a result, members have made investments in core and backhaul capacity prior to rolling out last-mile fiber access to BDS customers. Benefits of this network investment are shared across residential and business customers. Further network investments have also been needed to increase redundancy to enable BDS performance requirements to be achieved.

3.1.7. Core and backhaul network capacity upgrades have been achieved through investment in laying new fiber and, to a lesser extent, through acquisitions of existing fiber assets. Members operating in rural areas have constructed new fiber; localized rural fiber assets that coincide with members' existing area of operations, and are available for purchase, are rare. Where rural members have acquired other companies, it has been to expand into other cable systems. Members in urban areas, or spanning urban, suburban and rural areas, have been able to merge existing assets, but have also invested in constructing new backhaul fiber routes.

3.1.8. ACA members are looking to grow their Ethernet revenues by 20% for the next year. This is in line with market analyst predictions[3].

3.1.9. In order to meet this growth, ACA members are making substantial investments into network expansion for BDS. Members, with already sizeable BDS revenue bases, are making annual investments of up to 2 times annual BDS revenue.

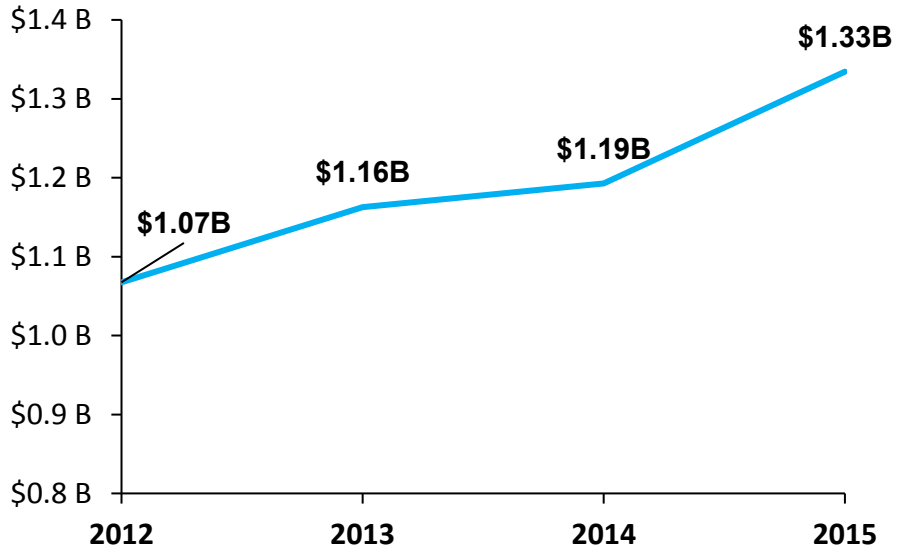
3.1.10. As well as proportionally high investments, the overall amounts invested by our members are significant. Smaller members interviewed based in rural areas had been investing between $0.2M and $3M annually in BDS. Larger members interviewed had been investing tens of millions of dollars annually. Extrapolating from these data, we estimate recent annual investment across ACA membership is at least many tens of millions and may be as great as three hundred million dollars.

3.1.11. Rural members focused investment across their rural markets; larger operators with BDS coverage over more expansive areas allocate their investment across each of urban, suburban and rural markets. Allocation between markets is based on revenue opportunities. Some members had a focus on urban areas due to the significant density of businesses while other were more balanced and had allotted 80% of investment to suburban and rural areas.

3.1.12. Investment trends of ACA members are similar to that of MSOs. Looking more broadly at the capital investment of MSOs nationally, where public data is more readily available, we see a similar trend of significant investment to support commercial services including BDS. Overall capital expenditure in commercial services from three of the five largest MSOs has been significant, sustained and, in the case of Comcast, growing.

[3] LightReading, Moffett: Business Services Critical to Cable Growth, Dec. 2015 – Commercial services are growing at a rate of 20% for cable providers

Figure 1: Top MSO Capital Investment in Commercial Services, 2012–2015[4]



3.1.13. This investment by the large MSOs has resulted in an expansion of fiber network and fiber connectivity to additional commercial premises. TWC has increased the number of fiber-lit buildings from 10,000[5] in 2012 to 70,000 today[6]. Charter has expanded from 55,000 fiber route miles and 5,500 fiber-lit buildings in 2012[7] to in excess of 65,000 fiber route miles and 12,000 fiber-lit buildings[8]. Cox Communications have expanded their fiber network from 25,000 fiber route miles in 2012[9] to 30,000[10]. Over the past five years, Cablevision have expanded fiber route miles by 50% and fiber-lit buildings by 80%[11].

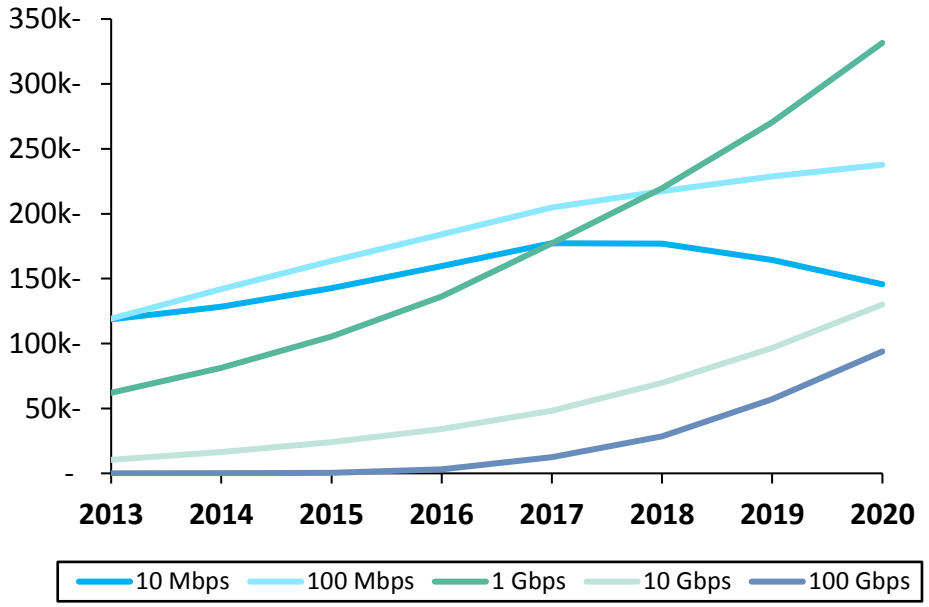
3.1.14. Investment to support BDS services, by our members specifically and by MSOs more generally, is serving to increase BDS market competition and to progressively expand modern BDS to areas currently constrained by legacy TDM technology.

3.2. Sustained Investment is Expected

3.2.1. Ethernet is a growing market as customers transition from legacy TDM services to support growing business bandwidth requirements. Between 2016 and 2020, Ovum predicts a compound growth rate of 16.1% in metro Ethernet connections. 1 Gbps connections are forecast to grow at the fastest rate, with the lower bandwidth 10 Mbps connections declining after 2017. To achieve higher bandwidths, businesses and cell towers will need to be connected to a fiber network.

[4] SNL Kagan, based on company financial reports (Comcast, Charter and Cablevision). Top MSOs Time Warner Cable and Cox Communications have not been included due to availability of public data on commercial services capital expenditure
[5] Comptel Plus Convention, Cable Wholesale: Your Guide to Solutions that Shape the Market, April 2012
[6] Time Warner Cable, Carrier Services Webpage, June 2016
[7] Comptel Plus Convention, Cable Wholesale: Your Guide to Solutions that Shape the Market, April 2012 (as for 3)
[8] Charter, Spectrum Business Network Map, 2015
[9] Comptel Plus Convention, Cable Wholesale: Your Guide to Solutions that Shape the Market, April 2012 (as for 3)
[10] Cox Communications, Carrier Services Webpage, June 2016
[11] Cablevision 10-K reports, 2010–2015, from 4,400 lit buildings and 4,350 fiber route miles in Dec. 2010 to 8,000 lit buildings and 6,400 fiber route miles in Dec. 2015

Figure 2: US Metro Ethernet Connection Forecast by Bandwidth, 2013–20[12]



3.2.2. Current fiber coverage of commercial buildings and cell towers is partial. Investment from across the telecommunications provider spectrum has been steadily addressing the number of businesses not connected with fiber. The most recent studies indicates that 46.2% of commercial buildings with >20 employees are now connected by fiber[13]. While there has been a gain of 7 percentage points since 2013[14], that still leaves a majority of commercial buildings yet to be fiber-connected. Sustained investment will be required to meet the connectivity needs of the nation's businesses.

3.2.3. Where our members specified their future investment plans for BDS, all intend to continue investment. Investments ranged from approximately 10% to 200% of annual BDS revenue. These were allocated both to expanding the coverage of fiber access networks and to improving capacity and resilience in the backhaul and core of the networks. Through continued investment, our members can help to reduce the number of buildings yet to be fiber-connected.

3.3. Investments in Product and Service Improvements

3.3.1. As we note in 2.1.8, some members bundle additional services to extend their relationship with their customers. In some cases these additional services might be limited to voice products; there are examples of both larger urban-focused and smaller rural-focused members where voice is the only adjacent service sold. We also identified members that had developed, or are developing, more complex solutions to suit evolving customer needs.

3.3.2. Our members are also looking to deliver and offer adjacent services such as cloud services and consultative services. The cloud services that are being actively considered

[12] Ovum, Ethernet Services Forecast 2013–2020, Sept. 2015
[13] Vertical Systems Group, US Business Fiber Penetration Reaches 46.2%, April 2016
[14] Vertical Systems Group, US Business Fiber Gap Narrows in 2013, April 2014 – 39.3% of commercial buildings with >20 employees were fiber connected

or deployed included hosted voice, managed WiFi and managed desktop products. Consultative services being considered include disaster recovery and data integrity consulting and solution implementation.

3.3.3. Beyond capital investment, our members are also investing time and resources to better serve customers:

- A number of members noted that they are quicker to onboard new customers with new BDS connections than ILEC competitors;
- All interviewed members provide customer service and sales from on-shore locations, which is highly valued by some customers. Some of our rural members provide localized customer service within adjacent towns to many of their customers. Additionally, we heard from members planning improvements to enhance the customer experience (e.g. improvements to sales force and customer service teams);
- Our members' investments are also increasing the availability of redundant network paths which satisfies customers with a need for highly resilient networks;

3.3.4. Our members' investments are expanding the number of BDS providers available to customers and extending higher bandwidth services to under-served areas. As we further explore in section 4, our members' involvement has helped to result in pricing declines, and investments are presenting customers with a wider array of choice of adjacent products and higher quality localized customer service provision.

4. BDS Pricing Trends

4.1. Approaches to Pricing BDS

4.1.1. At its core, our members' BDS pricing approach for new customer connections is driven by an evaluation of the likely returns over the lifetime of a customer contract. These new connections are often priced on an individual case basis (ICB) formed of a monthly recurring charge (MRC) and a one-off non-recurring charge (NRC). ICB pricing is used for new connections as there will be many variables that influence the cost to deliver service (e.g. fiber dig costs, variable redundancy requirements, etc.).

4.1.2. Our members, being smaller providers, have more limited access to, or a higher cost of, capital and therefore have less room for error in making these determinations. Should payback periods lengthen, which would occur should rate regulation be imposed, they would be more reluctant to invest. Fewer customers therefore would be able to receive the benefit of fiber BDS. This is particularly true for smaller members that serve rural areas.

4.1.3. There are costs associated with both deploying fiber to the end customer and in delivering an active BDS service. ACA members seek to recover fiber deployment costs within the customer's first contract term to avoid having sunk costs with no revenue. Where costs cannot be recovered in the initial term, smaller providers proceed cautiously, especially because proceeding may harm their credit rating and result in the breach of lending covenants.

4.1.4. Pricing for the service is generally driven by market forces (with the proviso that, for each bid, an analysis is performed to confirm satisfactory returns are predicted). Factors that influence active service pricing include service specification, bandwidth procured, contract length, the geographic market, and the prospective customer's market. We did also encounter operators who used a cost-plus approach for pricing active services.

4.1.5. Service specification, bandwidth and contract length are the lead factors in determining active service pricing. If a customer requires a high degree of redundancy, for example, this will increase both the cost and price. Higher bandwidth services have a lower $/Mbps metric than lower bandwidth services. Customers that commit to a longer contract length will also see lower $/Mbps. Customers may request varied performance requirements, bandwidth, redundancy, and contract terms, all of which will have a significant impact on service pricing. As a result of these many factors, fiber BDS pricing can be complex.

4.1.6. Geographic markets may have different pricing due to the competitive intensity faced, customer buying maturity and the availability and density of potential revenue opportunities passed. If the opportunity to connect one customer opens up opportunities to connect several others, members may offer more attractive pricing in order to secure the anchor tenant. The interviewed members were willing to improve the likely penetration of future connections at the expense of lower margins with assured anchor tenants.

4.1.7. Members serving rural areas typically cover a concentration of smaller towns and cities proximate to one another. Some of our members discussed how they offer consistent service pricing across rural markets; this is likely to be driven by similar opportunity density. Some variation in fiber deployment pricing will still exist though, driven by variation in the length of dig required.

4.1.8. Our large members cover urban, suburban and rural areas where there are differences both in the BDS opportunity density, customer buying maturity and the number of providers encountered. As a result, some members may have lower prices for urban areas compared to rural areas, although this may change over time as the above mentioned factors change. Other members noted that their service pricing for different geographic areas varies minimally.

4.1.9. With the exception of E-rate and cellular backhaul, members do not see notable variations in margins by customer vertical. For example, Hospitals and Enterprises would receive similar pricing providing their bandwidth and service requirements are the same. With E-rate requests for proposals/tenders readily viewable online, the transparency has led to increased competition and reduced margins, therefore benefiting customers. Cellular backhaul is also perceived to be more competitive as the MNOs typically procure larger contracts covering multiple towers. Customer cooperatives have also formed, providing effective buying power and delivering lower prices for some school districts and local governments.

4.1.10. Customers will have their own preferences regarding pricing structure in terms of NRCs versus MRCs. It is not the case that our members simply recover the cost of fiber deployment and customer connection through an NRC and the cost of service operation through the MRC. Most customers prefer to procure using an opex model and our members are flexible to meet those needs. This results in the bulk of deployment charges being amortized over a customer's contract period. However, some customers do prefer a higher upfront charge. For example, one member provided fiber BDS to franchisees of a hotel group. The hotel group required a standard MRC across the franchisee base with any variation in cost being recovered through variable NRCs. Our members are proud of their ability to be flexible to customer needs, and hence of their ability to generate value for their customers in the BDS market.

4.1.11. Where further products are procured as part of a deal involving connectivity, there can be an opportunity for discounting. While we did find examples of cross-selling discounts, these did not seem to be extensive. Further products sold on top of connectivity were generally priced separately from connectivity.

4.1.12. For existing customers, members will typically proactively engage the customer to discuss contract renewal prior to the initial contract expiry. Fiber deployment costs are likely to be recovered during the customer's first contract term so the price will decline on removal of these charges. Discussions with customers typically results in either a further decrease in MRC pricing, or an increase in the bandwidth supplied for the same MRC.

4.1.13. Our surveyed members provide attractive discounts to wholesale partners, enabling them to generate positive returns.

4.1.14. When pricing fiber BDS, members generally look to provide the most attractive pricing. This is true whether they are in competition with an ILEC or other providers, providing retail or wholesale services. Pricing is not the only purchasing criteria and some members emphasize other benefits of their services, such as localized customer service. However, a typical member does compete on pricing. Both smaller members in rural areas and larger members spanning multiple states compete on price. By pricing below ILECs and other competitors our members are stimulating pricing competition in the areas they serve.

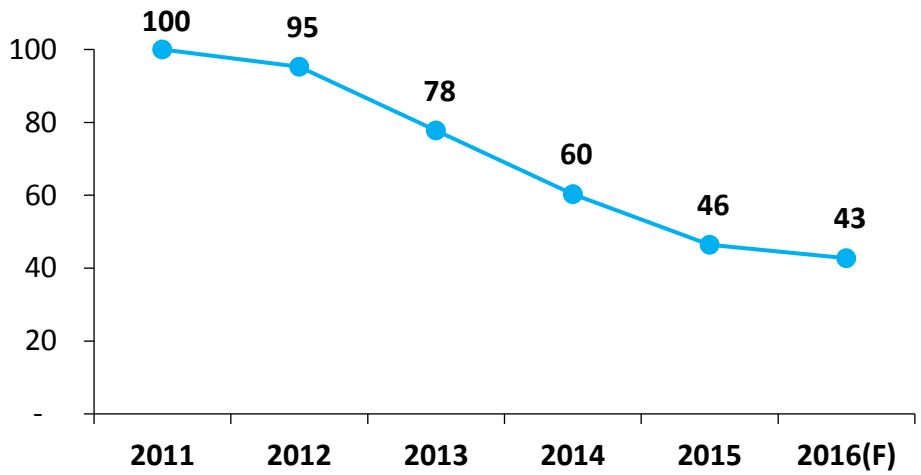
4.2. Price Decreases for BDS

4.2.1. Sustained price decreases have a positive impact on the customers of BDS. Businesses can procure the bandwidth they need rather than what they can afford. They can also free up capital to invest elsewhere, such as in increasing employment or developing their product and service offering.

4.2.2. In general, our members report that pricing has been decreasing across their markets, whether they are urban or rural. The pricing decreases are primarily the result of margin decreases in response to competition and not due to decreased costs. On average, our members report a pricing decrease for Ethernet services of ~50% over the past 5 years. In some cases, members report that pricing now stands at around 25-30% of where it was 5 years ago. These decreases are making Ethernet services more affordable for US businesses and communities.

4.2.3. In figure 3, we show how average pricing has evolved for one of our members with significant operations across urban, suburban and rural markets. Pricing decreased significantly over the time period (a 57% decrease in pricing between 2011 and forecasts for 2016). Significant decreases in pricing are also noted since 2013, the year that the Wireline Competition Bureau analyzed using data from the '2015 Data Collection'. Since 2013, prices are estimated to decrease by 45% for this example member.

Figure 3: Average Ethernet Pricing Index for an Example ACA Members, 2011-16(F)



4.2.4. Nationally, Ethernet pricing has been falling at a sustained rate. Our members report that they are actively offering attractive Ethernet pricing to customers in their areas.

Initial indications point to a faster rate of BDS pricing declines in our members' BDS network footprint than on a national scale. BDS customers of our members can, therefore, reap the benefits of lower pricing.

5. Market Conduct

5.1. Conduct in Retail Markets

5.1.1. Customers of BDS will look for providers that offer attractive commercial terms, but also who can be both flexible to, and understanding of, their fluid requirements. Customers are looking for providers who can provide high-caliber customer service, and can innovate to bring them new products whilst reducing prices. On interviewing our members, we found evidence that they are demonstrating positive behaviors that benefit customers. This includes progressive pricing practices, flexibility on service and contractual terms, and flexibility on the balance of revenue generated from MRCs and NRCs. Our members also look to deliver better customer service and improve their efficiency. All of these positive practices can aid customers in their adoption and use of BDS.

5.1.2. Customers of BDS generally place pricing at the top of their purchasing criteria. Our members generally aim to price in a reasonable manner to encourage more businesses to transition from legacy TDM services to Ethernet. Our members recognize the value in delivering reasonable and sustainable pricing over the long term, as this should enable them to achieve higher customer satisfaction, leading to lower churn and improved penetration of revenue opportunities.

5.1.3. Beyond pricing, our members are flexible if customers look for a change in service and contractual terms. One member recalled how a school district had needed higher bandwidth over a short period to deal with examinations, but could not afford to pay more. Our member supplied a temporary burst of bandwidth at no extra cost to enable the customer to manage with their current service during the busy period.

5.1.4. Customers' bandwidth needs are trending upwards. Our members noted that, if customers outgrow their procured bandwidth service mid-contract, a customer would be upgraded, their existing contract would be invalidated and a new contract would take its place. Our members would keep the original contract end date static and not seek to lengthen the commitment term.

5.1.5. Our members see the end of a customer's existing contract to be an opportunity to generate additional customer value. When a customer gets to the end of their existing contract, they are proactively engaged and may be given a choice of increasing the bandwidth supplied or reducing their MRC (as noted in 4.1.12.). We also heard that our members view customer contract terms flexibly and are open to accommodate customer-led changes to the scope of service provided.

5.1.6. While there is a backdrop of increasing bandwidth requirements, occasionally businesses of customers can fall on hard times, especially those in cyclical sectors. One senior member employee noted that, at a previous employer, their customers included a number of oil companies, which encountered a period of low oil prices, severe cost pressures and resource constraints. These oil customers had wanted to reduce the bandwidth and MRC due to the financial hardship and reduced headcount. While not contractually obliged, they worked with their customers to find a mutually agreeable solution. The member felt that they would not hesitate to adopt a similar approach

(faced by their senior employee previously), if comparable circumstances arose in the future for a customer.

5.1.7. Flexibility is not limited to contractual terms and, by being flexible with revenue generation and cost recovery through NRCs and MRCs, our members help customers to finance their transition to fiber-based BDS. As we reference in 4.1.10., members can provide pricing that is weighted to NRCs or MRCs depending on the customer's needs.

5.1.8. Our members provide customer service that is often proximate to their customers. For our larger members this could be on-shore customer service and a regional salesforce. For our rural members, this could even be in- or near- market customer service and a localized sales team. Some customers value the proximity to our members' customer service teams.

5.2. Conduct in Wholesale Markets

5.2.1. Empowering wholesale partners can lead to increased retail competition, in turn providing end customer choice of adjacent products and services. Remote end customer sites can also be connected to a wider WAN without the need for them to manage multiple service provider relationships. All members interviewed provide wholesale services to wholesale partners and for some members this has developed to become a significant proportion of their BDS business (up to 20% of BDS revenues). Larger members covering wider tracts of land tend to have more sophisticated wholesale businesses (e.g. dedicated wholesale business managers and sales organizations). Rural members have more limited resources and may encounter wholesale in a more ad hoc fashion.

5.2.2. As we note in 4.1.13., our members typically provide discounts for wholesale partners enabling them to achieve sufficient returns. Our members also note they can flex contract lengths to align with the end customer's contract. Agreeing contract lengths pragmatically so that they map onto contracts for end customers means that the wholesale partner can plan more effectively and does not take on more risk than necessary. One member noted discounts would be applied indiscriminately to any provider willing to establish a network-to-network interface (NNI).

5.2.3. One interviewed member is in the process of establishing their wholesale segment and is currently developing a framework of best practices to ensure that can grow sustainable and mutually-rewarding relationships with wholesale partners. Best practices include publishing a list of 'lit buildings' to provide partners with transparency of which buildings are connected and ensuring that indirect sales channels are not disadvantaged relative to the direct sales team.

6. Impact of the Proposed Regulations on our Members

6.1.1. Section V.D. of the Further Notice outlines the Competitive Market Tests proposed by the FCC, with Sections V.E. and V.F. describing rules that may apply to such markets. Paragraph 311 of the Further Notice requests input on the potential impacts of the proposed rules on infrastructure investment, innovation, administrative feasibility, and any commercial implications.

6.1.2. The FCC has made multiple requests for comment to further define the eventual rulemaking for "non-competitive" markets. For example:

- Which providers should the rules apply to?
- Should rules be limited to TDM services or technology-neutral?
- What option should the FCC adopt for anchoring of prices?

Although it is not clear what shape the eventual rulemaking will take, we have asked our members what impact would BDS pricing regulations have on them?

6.1.3. Members were clear on the impact of the proposed rulemaking on their BDS investment. There would be decreased investment than under the existing regulatory paradigm. Our members are capital-constrained and a longer payback would limit the number of premises they can deploy fiber to. Pricing regulations would decrease income and extend the payback period for the average fiber opportunity. Fewer opportunities would conform to our members' accepted maximum payback periods, resulting in a decrease in the number of bids our members would participate in and, ultimately, connect. This would have a detrimental effect on fiber BDS competition, but also coverage. As the majority of commercial premises have not yet been connected to fiber, the rate at which organizations in these premises can benefit from the bandwidths provided by fiber BDS is curtailed. The net impact would be a reduction in both the scope and pace of investment by a members.

6.1.4. As we outline in 3.1.11., investment is often based on revenue opportunity. If regulations cap revenue (and hence margins), the rural areas with limited revenue opportunities may no longer justify the cost to build. Those areas with poor fiber BDS coverage and limited competition would be least likely to benefit from future investment.

6.1.5. As we outline in section 3.1, our members, and MSOs generally, have made significant investments to date in BDS; both organic and acquisitive. If regulations artificially reduce pricing, the expected returns on these investments will be depressed. Actual revenues and income will be lower than forecast and this shortfall may need to be made up for by cutting costs. These cuts may come from planned investment in BDS, but could also come from investments in product development, residential services or elsewhere in our members' businesses.

6.1.6. Financing for member operations generally comes from smaller regional banks. Increased regulation may make it more expensive to borrow capital. As well as hindering future investments, increased regulation would harm our members' ability to repay debt from existing investments.

6.1.7. Compliance is also likely to place additional stresses on our members, who operate in unregulated market conditions without the need for dedicated regulatory resources. Complying with the '2015 Collection' was extremely burdensome for our smaller members and staff had to be diverted from 'business as usual' activities in order to respond satisfactorily to the FCC. The amount of time required to respond to bids will increase as members have to ensure their bids are compliant with regulations, which will delay solution deployment for customers. With the risk of increased compliance in the future, one member noted that they might consider separating their BDS operations from their "best efforts" business. Another would consider partnering with other firms or stop providing BDS altogether.

6.1.8. Compliance burdens themselves can also serve as a deterrent to investment. Members that operate in "competitive" markets will increasingly avoid further investment if it means expanding into regulated "non-competitive" markets, due to the cost and uncertainty associated with compliance. Compliance burdens could also prevent those members who have yet to invest in BDS from doing so.

6.1.9. Our members compete on price, customer service and features of the products they sell. Some of these differentiating factors, such as localized customer service, are more costly to operate than those provided by ILECs. Our members do not have the economies of scale of the ILECs and, in general, their cost bases are expected to be higher. Applying pricing regulations to our members is likely to have a more significant impact on our members' margins and could cause competitive distortions in the market. Furthermore, some of our members may be forced into re-shaping their business strategy to achieve a lower cost base by sacrificing non-pricing components of customer value, such as service quality and customer service, which would be unfortunate for the market.

6.1.10. A lack of investment and a less competitive market will ultimately cause detriment to BDS customers. Limited competition will restrict businesses' access to the products, features, service and innovation of competitive providers. There will be few options for truly redundant connections. More striking will be the slower growth in coverage of rural areas with fiber, forcing these communities to rely on outdated TDM technologies supplied by ILECs for longer. That would artificially constrain the bandwidth available for them to compete, serve and thrive in their communities.

7. Conclusion

7.1.1. In this report, we have detailed the activities of our members in BDS. Our members in BDS primarily serve Ethernet across all customer verticals. Members overwhelmingly supply high bandwidth services that legacy TDM circuits would not be able to supply. Higher bandwidth services are supplied across both rural and urban areas. A full suite of fiber connectivity products is supplied (EPL, EVPL, ELAN, and DIA), also across both rural and urban markets. Our members' investments have brought and continue to bring big-city services to small-town America.

7.1.2. Our members have been making sustained investment to deploy fiber from the core to the edge of their networks, with no signs that this investment is set to stall. Indeed, to achieve their BDS growth forecasts, our members have committed themselves to continued deployment. Members that have already grown BDS into sizeable proportions of their business have dedicated multiples of their BDS revenues to further expand their network to reach new customers.

7.1.3. Our members' investment also aligns with larger cable providers. Cable providers are recent entrants to the BDS market and our combined investments are winning share from ILECs. This market disruption is helping to extend fiber coverage to under-served areas and should be commended and encouraged by the FCC.

7.1.4. In deploying networks, members are innovating to decrease the cost to serve. Strategic routes are being constructed to pass future business opportunities; excess fiber is being deployed to offer greater customer choice in the future; and members are making opportunities further from their networks addressable by extending laterals from splice points rather than fiber nodes.

7.1.5. Various pricing strategies are used, but the outcome is the same. Members' pricing strikes a balance between generating sufficient returns while aiming to be the most attractive price point to prospective customers. Members price below ILECs and, in doing so, have been driving prices lower for customers near their BDS network footprints.

7.1.6. Our members have been and continue to be flexible to customer requirements. They are understanding of service and contractual changes that customers might require throughout their relationship. We found no evidence of restrictive practices that were aimed to cause detriment to consumers; on the contrary our members are proactively working to treat customers fairly and help their businesses succeed.

7.1.7. We also find a willingness of our members in working with wholesale partners. Wholesale services are readily available and in some cases actively encouraged. Some of our members are specifically developing collateral and processes to take compelling wholesale propositions to market.

7.1.8. Any rate regulation of our members would have a negative impact on our members' financing activities, resources, and, above all, investment. Investment would likely be depressed as the business case to deploy fiber dims. The capital that would be deployed by our members might serve fewer customers, or our members might be

more selective about which prospective customers they will help to upgrade to fit-for-purpose bandwidths.

7.1.9. 54% of commercial locations with more than 20 employees remain to be connected to a fiber network. For these organizations, many of whom have outgrown the bandwidth supplied by TDM services, extending fiber coverage is imperative. The current pace and scale of fiber BDS investments made by our members is disincentivized by the proposed regulations. If these regulations proceed in their current form, the rate of connection of these organizations will be slowed.

7.1.10. Reduced investment by our members would result in reduced competition in the longer term. Prospective customers would find their customer service, network redundancy requirements and product needs less likely to be fulfilled as fewer competitors extend their BDS networks to serve them.